COUNTY OF DUMFRIE

THIRTY-EIGHTH

ANNUAL REPOR

UPON THE

Health and Sanitary Condition of
the County.

1928.

BY

JOHN RITCHIE, M.B., Ch.B., D.P.H.

County Medical Officer.

DUMFRIES:
ROBERT DINWIDDIE, PRINTER AND LITHOGRAPHER

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To

The Department of Health for Scotland.

The County Council of Dumfriesshire.

The District Committees.

The Town Councils of Annan, Sanquhar, Lochmaben,
Lockerbie, Moffat, and Langholm.

Gentlemen,

I beg to submit the Thirty-eighth Annual Report upon the Health and Sanitary Condition of the County during 1928.

I am, Gentlemen,

Your obedient Servant,

JOHN RITCHIE.

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REPORT.

VITAL STATISTICS.

Population.

The Registrar-General's estimate of the Population in the County Landward at the middle of 1928 is 45,800. The details of the Districts are :—

District.	Acres.	Census 1921.	Estimated 1928.
Thornhill	 214,968	12,699	12,849
Dumfries	 78,503	8,871	8,729
Annan	 83,865	12,551	13,397
Lockerbie	 170,859	8,409	7,988
Langholm	 136,113	3,070	2,837
County Landward	 684,308	45,600	45,800

The figure given is probably higher than the actual population. A Police Census taken during the summer of 1928 gave a higher figure for Thornhill District, and decidedly lower figures for Dumfries and Annan Districts. Thornhill and Annan Districts are the parts of the County which have been most affected by migration during the current intercensal period.

Births.

The Births in the County Landward, intimated by Registrars and corrected for transfers, numbered 862 (415 males, 447 females) during 1928. This is a decrease of 28 on the previous year. The fall was most evident in Thornhill District, which, however, still has the highest birth-rate in the County. Annan and Lockerbie Districts also shewed a fall, while in Dumfries and Langholm Districts there was a slight increase.

The birth-rate in the County Landward was 18·8 per 1000 persons living. This is—with the exception of 1917, when the rate was 17·9—the lowest rate recorded in the County since 1881. The decennial averages since then have been :—

1881-1890	28·38 per 1000 persons living.
1891-1900	25·34 per 1000 persons living.
1901-1910	23·43 per 1000 persons living.
1911-1920	22·04 per 1000 persons living.

The figures for the Districts are :—

District.	Males.	Females.	Total.	Birth-rate per 1000 persons living.
Thornhill	118	161	279	21·7
Dumfries	77	64	141	16·2
Annan	111	134	245	18·3
Lockerbie	79	68	147	18·4
Langholm	30	20	50	17·6
County Landward	415	447	862	18·8

The birth-rate for all Scotland during 1928 was 19·8 per 1000, the same as in 1927.

Of the 862 births registered in the County Landward, 108 were illegitimate. The proportion of illegitimate to total births in the Districts is as follows :—

District.	Total births.	Illegitimate births.	Proportion of Illegitimate per 1000 total births.
Thornhill	279	27	97
Dumfries	141	24	170
Annan	245	30	122
Lockerbie	147	20	136
Langholm	50	7	140
County Landward	862	108	125

Deaths.

The number of Deaths ascribed by the Registrar-General to the five Districts was 627, an increase of 23 over the previous year. The figures for the Districts are :

District.	Male	Female	Total	Death-rate corrected for [illegible]
Thornhill	105	75	180	12·8
Dumfries	52	76	128	12·9
Annan	81	84	165	11·3
Lockerbie	54	52	106	11·3
Langholm	28	20	48	14·6
County Landward	320	307	627	12·03

The death-rate for all Scotland during 1925 was 13·3 per 1000 living.

As has been pointed out in previous reports, the method of transferring deaths affects Dumfries District rather unfairly, as deaths of patients in the Crichton Royal Institution who come from places outwith Scotland are not transferred. This makes the District death-rate appear higher than it would otherwise do.

The numbers, causes, rates, and age distribution of deaths in the County Districts are shewn in the following tables :

DEATHS IN COUNTY DISTRICTS IN 1928.

Cause of Death.	Thornhill.	Dumfries.	Annan.	Lockerbie.	Langholm.	County L'wd.
Enteric Fever	...	...	...	...	...	...
Typhus Fever	...	...	...	...	...	...
Smallpox	...	...	...	...	...	...
Measles	1	...	1	...	...	2
Scarlet Fever	...	1	...	...	...	1
Whooping-cough	1	1	...	...	...	2
Diphtheria	...	1	...	...	...	1
Influenza	2	2	2	2	3	11
Encephalitis Lethargica	...	1	2	1	...	4
Cerebro-spinal Meningitis	...	...	...	...	...	...
Other Epidemic Diseases	1	...	1	...	...	2
Pulmonary Phthisis	12	8	12	5	1	38
Tuberculous Meningitis	...	1	1	...	...	2
Abdominal Tuberculosis	2	1	...	...	...	3
Other Tuberculous Diseases	2	1	1	...	...	4
Malignant Tumours	26	11	10	8	4	59
Rheumatic Fever	...	1	1	...	...	2
Meningitis (not C.S. or Tub.)	...	1	1	1	...	3
Apoplexy	25	13	22	15	5	80
Heart Disease	31	21	26	17	10	105
Diseases of Arteries	2	2	3	2	3	12
Bronchitis	13	10	8	5	...	36
Pneumonia (all forms)	5	4	17	9	...	35
Other Respiratory Diseases	5	1	3	...	1	10
Enteritis (under 2 years)	...	...	2	...	...	2
Appendicitis	...	1	...	...	1	2
Liver Diseases (not Malignant)	...	2	...	...	...	2
Nephritis (Bright's Disease)	2	4	10	3	1	20
Puerperal Sepsis	1	...	...	...	...	1
Other Diseases and Accidents of Pregnancy, &c.	...	1	...	...	1	2
Diseases of Early Infancy and Malformations	6	4	12	10	2	34
Suicide	1	1	1	1	1	5
Violence (excluding Suicide)	7	6	3	11	2	29
Other Defined Diseases	33	26	24	15	12	110
Ill-Defined Diseases	2	2	2	1	1	8
All Causes	180	128	165	106	48	627

DEATH-RATES IN COUNTY DISTRICTS IN 1928.

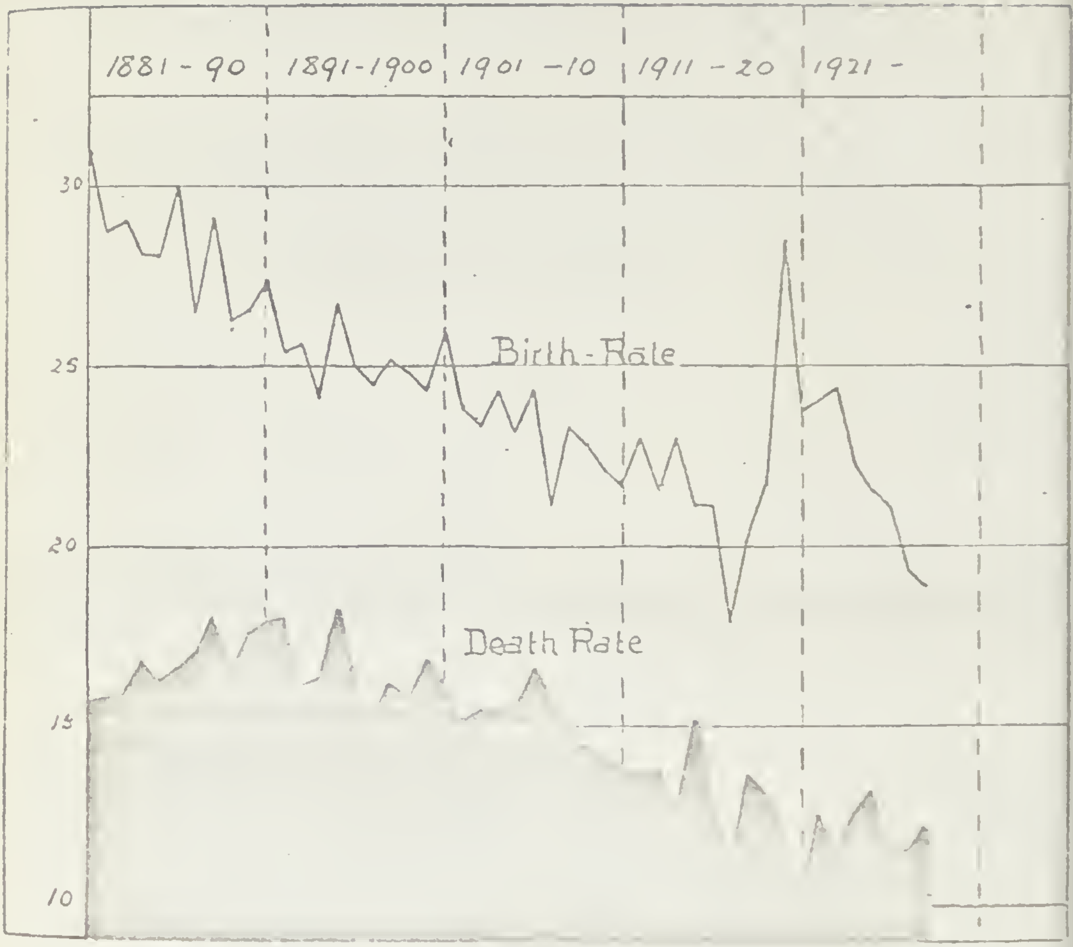
(CORRECTED FOR AGE AND SEX DISTRIBUTION.)

CAUSE OF DEATH.	Thornhill.	Dumfries.	Annan.	Lockerbie.	Langholm.	County Landward.
Enteric Fever	...	...	...	...	...	...
Typhus Fever	...	...	...	...	...	...
Smallpox	...	...	...	...	...	...
Measles	0·08	...	0·07	...	...	0·04
Scarlet Fever	...	0·11	...	...	...	0·02
Whooping-cough	0·08	0·11	...	...	...	0·04
Diphtheria	...	0.11	...	...	...	[illegible]
Influenza	0·16	0·22	0·14	0·25	1·06	0·24
Encephalitis Lethargica .	...	0·11	0 14	0·12	...	0·08
Cerebro-spinal Meningitis .	...	...	...	...	...	...
Other Epidemic Diseases .	0·08	...	0·07	...	...	0·04
Pulmonary Phthisis . .	0·93	0·90	0·89	0·62	0.35	0·83
Tuberculous Meningitis . .	...	0·11	0·07	...	...	0·04
Abdominal Tuberculosis .	0·16	0·11	...	...	...	[illegible]
Other Tuberculous Diseases .	0·16	0·11	0·07	...	...	0·08
Malignant Tumours . .	2·0	1·21	0·74	1·0	1·40	1·28
Rheumatic Fever . . .	...	0·11	0·07	...	...	0·04
Meningitis (not C.S. or Tub.) .	...	0·11	0.07	0·12	...	0·65
Apoplexy	1·92	1·47	1·64	1·96	1·76	1·74
Heart Disease . . .	2·39	2·37	1·92	2·12	3·52	2·29
Diseases of Arteries . .	0·16	0·22	0·22	0·25	1·06	[illegible]
Bronchitis	1·0	1·1	0·66	0·62	...	0·78
Pneumonia (all forms) . .	0·38	0·45	1·27	1·11	...	0·76
Other Respiratory Diseases .	0·38	0·11	0·22	...	0·35	[illegible]
Enteritis (under 2 years) .	...	...	0·14	...	...	0·04
Appendicitis	...	0·11	...	...	0·35	0·04
Liver Diseases (not Malignant)	...	0·22	...	...	...	[illegible]
Nephritis (Bright's Disease) .	0·16	0·45	0·74	0·37	0·35	0·43
Puerperal Sepsis . . .	0·08	...	...	...	...	0·02
Other Diseases and Accidents of Pregnancy, etc. . . .	...	0·11	...	...	0·35	0·04
Diseases of Early Infancy and Malformations . .	0·46	0·45	0·89	1·25	0·70	0·73
Suicide	0.08	0·11	0.07	0.12	0.35	0·10
Violence (excluding Suicide) .	0·54	0·68	0·22	1·37	0·70	0·63
Other Defined Diseases . .	2·55	2·88	1·78	1·96	4·22	2·40
Ill-Defined Diseases . .	0·16	0·22	0·14	0·12	0·35	0·17
ALL CAUSES . .	12·8	12·9	11·3	11·3	14·6	12·03

The deaths in the five Districts classified in age groups and according to cause were :—

Cause of Death.	–1	1–	5–	10–	15–	25–	35–	45–	55–	65–	75–	85–	All ages
Enteric Fever . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhus Fever . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	1	1	...	...	...	...	...	...	...	...	...	...	2
Scarlet Fever . . .	...	...	...	...	1	...	...	...	...	...	...	...	1
Whooping-cough . .	1	1	...	...	...	...	...	...	...	...	...	...	2
Diphtheria . . .	...	...	1	...	...	...	...	...	...	...	...	...	1
Influenza	1	2	...	...	...	...	1	1	2	2	1	1	11
Encephalitis Lethargica .	...	...	...	...	...	1	...	2	...	1	...	...	4
Cerebro-spinal Meningitis .	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Epidemic Diseases .	1	...	...	...	...	...	1	...	...	...	...	...	2
Pulmonary Phthisis . .	...	...	2	...	6	16	3	7	3	1	...	...	38
Tuberculous Meningitis .	...	...	...	1	1	...	...	...	...	...	...	...	2
Abdominal Tuberculosis .	...	1	...	...	...	1	1	...	...	...	...	...	3
Other Tuberculous Diseases	...	1	...	...	1	1	...	...	...	1	...	...	4
Malignant Tumours . .	...	...	...	...	1	...	2	8	17	19	11	1	59
Rheumatic Fever . .	...	...	1	...	1	...	...	...	...	...	...	...	2
Meningitis (not C.S or Tub.)	2	1	...	...	...	...	...	...	...	...	...	...	3
Apoplexy	...	...	...	...	...	...	1	3	11	36	25	4	80
Heart Disease . . .	...	...	...	1	...	...	6	4	16	39	32	7	105
Diseases of Arteries . .	...	...	...	...	...	...	...	...	...	4	5	3	12
Bronchitis. . . .	6	...	...	...	1	...	1	...	2	10	12	4	36
Pneumonia (all forms) .	8	3	...	...	...	3	1	2	3	9	6	...	35
Other Respiratory Diseases	...	1	...	...	...	...	2	...	2	3	1	1	10
Enteritis (under 2 years) .	2	...	...	...	...	...	...	...	...	...	...	...	2
Appendicitis . . .	...	1	...	...	...	...	...	...	1	...	...	...	2
Liver Diseases (not Malignant)	...	...	...	...	...	...	...	1	...	1	...	...	2
Nephritis (Bright's Disease)	...	...	...	...	1	...	3	1	5	5	3	2	20
Puerperal Sepsis . .	...	...	...	...	1	...	...	...	...	...	...	...	1
Other Diseases and Accidents of Pregnancy, etc. .	...	...	...	...	1	...	1	...	...	...	...	...	2
Diseases of Early Infancy and Malformations .	34	...	...	...	...	...	...	...	...	...	...	...	34
Suicide	...	...	...	...	1	...	2	1	...	...	1	...	5
Violence (excluding Suicide)	1	4	2	1	4	3	1	4	6	2	...	1	29
Other Defined Diseases .	5	5	2	1	1	7	9	14	12	22	22	10	110
Ill-Defined Diseases . .	1	...	...	...	...	...	...	1	...	3	2	1	8
ALL CAUSES .	63	21	8	4	21	32	35	49	80	158	121	35	627

The fall of both the birth and the death-rates during the last 48 years are shown for the County Landward in the accompanying chart :



County Landward

Birth & Death-Rates 1881 - 1928.

The mortality from the principal Epidemic Diseases remains much as last year. There is a fall in the death-rate from Influenza—0·24 per 1000 as against 0·84 in 1927.

There are three more deaths from Pulmonary Tuberculosis than last year, but the death-rate from all forms of Tuberculosis remains practically the same—1·01 as against 1·1 in 1927.

The death-rate from Malignant Tumours is practically unchanged, that from Apoplexy and from Heart Disease are increased.

Infantile Mortality.—The deaths of children under one year of age numbered 63. The infantile mortality is 73 per 1000 births—the same figure as in 1927.

The rates in each of the Districts were :—Thornhill, 36 ; Dumfries, 57 ; Annan, 106 ; Lockerbie, 116 ; Langholm, 40.

The averages for the decennial periods since 1891 have been :—

1891-1900	95·20
1901-1910	96·67
1911-1920	85·75
1921-1928	73·3

The causes of death of infants under one year of age during 1928 were as follows :—

Whooping-cough	1
Measles	1
Erysipelas	1
Influenza	1
Meningitis	2
Pneumonia	8
Enteritis	2
Bronchitis	6
Melæna	1
Icterus Neonatorum	1
Convulsions	3
Heart Disease	2
Suffocation	1
Injury at Birth	2
Atelectasis	1
Premature Birth	10
Congenital Malformation	3
Atrophy, Marasmus, etc.	14
Other Causes	3
Total	63

Maternal Mortality.—One death from Puerperal Sepsis and two from Other Diseases or Accidents of Pregnancy were registered. This is equal to a maternal mortality of 3·4 per 1000 births. The corresponding figure last year was 8·9.

INFECTIOUS DISEASES.

The number of notifications of Infectious Disease received from the County Landward during 1928 was 521, which is an increase of 51 on the previous year. This is chiefly due to an increased prevalence of Scarlatina and Diphtheria.

Two hundred and thirty-five cases were notified under the provisions of the Infectious Diseases (Notification) Act, 1889, and two hundred and eighty-six in terms of Regulations made under Section 78 of the Public Health (Scotland) Act, 1897.

They comprised :—

(1) Notified under the Infectious Diseases (Notification) Act, 1889 :—

Enteric Fever	3
Scarlatina	136
Diphtheria	74
Erysipelas	18
Puerperal Fever	4
Total	235

(2) Notified in terms of Regulations made under Section 78 of the Public Health (Scotland) Act, 1897 :—

Ophthalmia Neonatorum	7
Chickenpox	119
Malaria	2
Encephalitis Lethargica	5
Acute Primary Pneumonia	34
Acute Influenzal Pneumonia	9
Pulmonary Tuberculosis	71
Non-pulmonary Tuberculosis	39
Total	286

The notifications received each month were :—

	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug	Sept.	Oct.	Nov.	Dec.	Total.
Enteric Fever	.....	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
Scarlatina	9	6	11	7	16	20	15	26	7	12	4	3	136
Diphtheria	11	3	8	6	6	5	10	.....	7	9	1	8	74
Erysipelas	.....	4	1	2	1	1	1	2	1	3	.....	2	18
Puerperal Fever	1	1	.....	.....	.....	.....	.....	1	.....	.....	1	.....	4
Ophthalmia Neonatorum	.....	2	.....	1	1	1	.....	1	.....	.....	.....	1	7
Chickenpox	4	.....	1	.....	.....	13	25	9	1	26	24	16	119
Malaria	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Encephalitis Lethargica	.....	.....	.....	.....	.....	.....	2	2	.....	.....	.....	1	5
Primary Pneumonia	3	4	3	6	1	2	3	.....	5	2	3	2	34
Influenzal Pneumonia	6	.....	1	.....	.....	.....	.....	.....	.....	1	1	.....	9
Pulmonary Tuberculosis	8	7	7	6	6	6	6	2	5	4	8	6	71
Non-pulmonary Tuberculosis	2	2	2	4	6	2	6	4	6	2	2	1	39
Totals	45	30	37	32	37	50	68	47	32	59	44	40	521

The Age-incidence is shown in the following table, which is summarised from the returns made to the Department of Health :—

	At all ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65.	65 and over.
Enteric Fever	3	.....	.....	2	1	.....	.....	.....
Scarlatina	136	2	35	73	14	11	1	.....
Diphtheria	74	.....	15	37	10	8	2	2
Erysipelas	18	1	.....	.....	2	7	6	2
Puerperal Fever	4	.....	.....	.....	3	1	.....	.....
Ophthalmia Neonatorum	7	7	.....	.....	.....	.....	.....	.....
Chickenpox	119	5	35	74	2	3	.....	.....
Malaria	2	.....	.....	.....	.....	2	.....	.....

	At all ages	Under 1	1 and under 5	5 and under 15	[illegible]	[illegible]	[illegible]	[illegible]
Encephalitis Lethargica	5	.....	.....	.....	.....	2	2	1
Acute Primary Pneumonia	34	2	9	8	4	2	5	4
Acute Influenzal Pneumonia	9	.....	.....	.....	3	1	2	3
Pulmonary Tuberculosis	71	.....	1	11	12	28	14	5
Non-pulmonary Tuberculosis	39	.....	11	15	6	2	5	.....
Total	521	17	106	220	57	67	37	17

The notifications from each District were:—

	Thornhill.	Dumfries.	Annan.	Lockerbie	Langholm.	Total.
Enteric Fever	.....	.....	.	3	.	3
Scarlatina	84	17	5	4	26	136
Diphtheria	27	26	13	5	3	74
Erysipelas	3	4	6	5	.	18
Puerperal Fever	1	.....	2	1	...	4
Ophthalmia Neonatorum	1	....	5	1	....	7
Chickenpox	21	11	72	14	1	119
Malaria	1	.....	1	.....	.....	2
Encephalitis Lethargica	.....	1	3	1	.....	5
Acute Primary Pneumonia	14	1	14	5	.....	34
Acute Influenzal Pneumonia	1	....	5	3		9
Pulmonary Tuberculosis	16	19	26	9	1	71
Non-pulmonary Tuberculosis	10	10	12	6	1	39
Total	179	89	164	57	32	521

Smallpox.—No case of Smallpox was reported during the year. The prevalence of this disease in various parts of Great Britain has necessitated a sharp watch being kept on persons who had been in areas where Smallpox was known to exist, and on patients suffering from diseases in any way resembling it.

On three occasions during the year I was asked by practitioners to see cases of what was regarded as possibly Smallpox. All proved to be chickenpox, presenting some unusual features.

The County has been free from Smallpox since 1904, but in view of the increasing neglect of vaccination it is improbable that this immunity can continue indefinitely.

Enteric Fever.—Three cases were notified as Enteric Fever, all being resident in Ecclefechan. Two of those proved to be suffering from the disease ; in the third the diagnosis was not confirmed. All made a satisfactory recovery. Despite careful enquiry, the source of infection could not be detected. There was no question of infected water or milk, and as regards other foods the families implicated appeared to get their supplies from a variety of sources as occasion served. No history of any other illness resembling Enteric Fever occurring in the village could be obtained, nor was there any reason to suppose that it had been introduced by patients resident at a private sanatorium in the neighbourhood.

The sanitary condition of the village is not satisfactory. What drainage exists passes into the Ecclefechan burn, which also forms a receptacle for a good deal of domestic refuse. I do not suggest that the condition of the burn could be responsible for the occurrence of Enteric Fever, but it indicates a hygienic standard eminently favourable to the spread of infectious disease. The District Committee has discussed the question on various occasions, but so far no effective remedy has been discovered.

Scarlatina.—There were 136 notifications of Scarlatina from the County Landward during 1928. This is 55 more than in 1927 and 3 less than in 1926. During the last ten years this disease has been prevalent on alternate years, save on one occasion when it took two years (1921-22) for the curve to attain its height. It has not been epidemic generally through the County since 1915.

Of the 136 notifications received, 84 were from Thornhill District, 50 of those being from the villages of Kirkconnel and Kelloholm, and coming from 35 households. A noteworthy point was the number of children below school age amongst the cases from Thornhill District. During the past ten years children under 5 have averaged 22 per cent. of the total scarlatinal notifications. During 1928, 32 per cent. of the Thornhill District notifications were under 5. This seems to indicate home infection and to support the view which I have expressed on various occasions, that the degree of overcrowding which exists at Kirkconnel is favourable to the spread of infectious disease.

Scarlatina was also prevalent in Langholm District, 26 notifications being received, which is much above the average. Only eight households were affected, of which three were responsible for 18 cases.

The number of cases and deaths, the sickness and mortality-rates, and the case-fatality from Scarlatina in the County Landward during the past five years have been :—

	1924.	1925.	1926.	1927.	1928.
Cases	121	88	139	81	136
Deaths	3	3	3	1	1
Sickness-rate per 1000	2·72	1·26	3·0	1·7	2·9
Mortality-rate per 1000	0·06	0·06	0·06	0·02	0·02
Case-fatality per 1000	24·79	34·09	21·5	12·3	7·3

Diphtheria.—There were 74 notifications of Diphtheria, which is an increase of 22 on the previous year. Thornhill and Dumfries Districts were most affected. In the former there were 27 cases, of which 15 were from the villages of Kirkconnel and Kelloholm.

In Dumfries District there was a recrudescence of the prevalence connected with Duncow School which was noted in last year's report. The cases, as a whole, were mild, and the fact that several had been ill for some time before medical aid was sought made control of the outbreak more difficult. Amongst 18 cases, including 2 carriers, connected with the school, 6 had been ill for four days, 1 for six, 1 for seven, 1 for eight, and 1 for ten days when removed to hospital. The school was visited on several occasions and 209 swabs taken from contacts or suspected carriers. A daily ration of antiseptic throat lozenges was given to scholars at Duncow for a short time in hope of limiting the infectivity of any unrecognised cases who might be in the school. I do not think it had much effect. The outbreak subsided after the exclusion of several carriers.

Of the total 74 cases, 71 were removed to hospital, the three others being regarded as "carriers" who could be adequately isolated at home.

Bacteriological confirmation of the diagnosis was obtained in 60 of the 74 cases.

The cases notified, deaths, and various rates during the past five years have been :—

	1924.	1925.	1926.	1927.	1928.
Cases	127	104	49	52	74
Deaths	0	5	1	0	1
Sickness-rate per 1000	2·8	2·2	1·06	1·1	1·6
Mortality-rate per 1000	0	0·1	0·02	0	0·02
Case-fatality rate per 1000	0	48·7	20·4	0	13·5

Puerperal Fever.—There were four notifications of Puerperal Fever—1 from Thornhill, 2 from Annan, and

1 from Lockerbie Districts. This is 2 fewer than last year. Two of the patients were removed to hospital—1 to Thornhill and 1 to Annan.

In my report of last year I drew attention to the lack of accommodation suitable for such cases in the County, and to the Board of Health's recommendations as to the provision that should be made.

The case-mortality during 1928, calculated on the figures available, was 25 per cent. During the previous ten years it averaged 59·2 per cent.

Chickenpox.—This condition is still notifiable. One hundred and nineteen notifications were received, the majority being from Annan District, as the disease was very common in Gretna township during the latter part of the year.

The notifications of **Influenzal Pneumonia** were 9—less than half the number in 1927—while those of **Acute Primary Pneumonia** were practically twice as many as in the previous year.

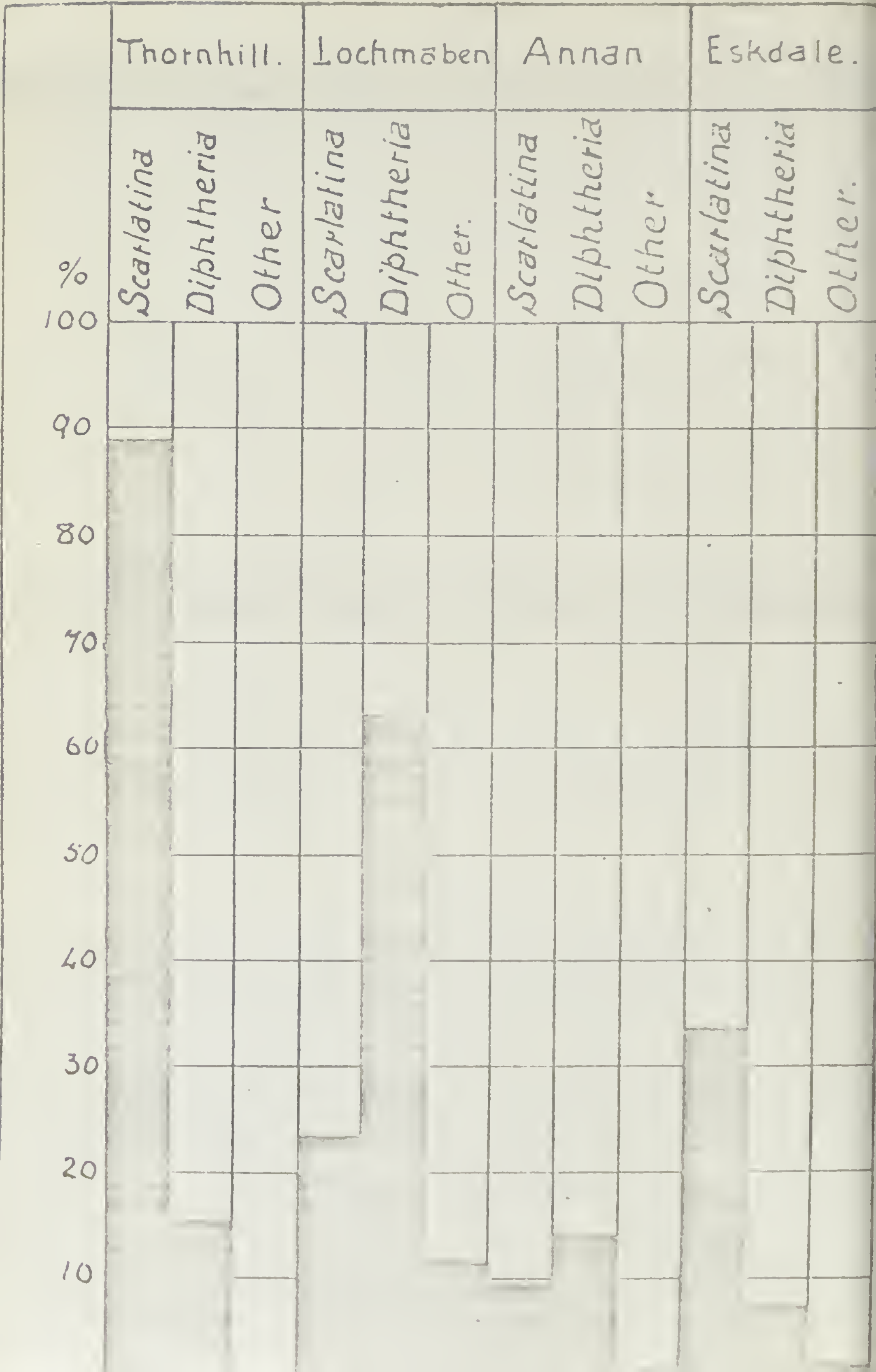
Hospitals.

Four cases notified as Enteric Fever, one hundred and eighty cases of Scarlatina, eighty-eight cases of Diphtheria, four cases of Erysipelas, and two of Puerperal Fever were admitted to Hospital during the year.

The details are as follows :

	Enteric Fever.	Scarlatina.	Diphtheria.	Erysipelas	Puerperal Fever.	Total.	
Thornhill.							
Thornhill District	.....	80	18	1	1	100	123
Sanquhar Burgh	.....	21	2	.....	.....	23	
Lochmaben.							
Dumfries District	.....	17	25	1	.....	43	83
Lockerbie District	3	4	9	.....	.....	16	
Thornhill District	.....	4	7	.....	.....	11	
Lochmaben Burgh	.....	1	2	.....	.....	3	
Lockerbie Burgh	.....	3	2	.....	.....	5	
Moffat Burgh	.....	1	2	.....	.....	3	
Dumfries Burgh	.....	.....	.....	2	.....	2	
Annan.							
Annan District	.....	5	13	.....	1	19	28
Annan Burgh	.....	7	2	.....	.....	9	
Eskdale.							
Langholm District	....	26	1	.....	.....	27	44
Langholm Burgh	1	11	5	.....	.....	17	
Total	4	180	88	4	2		278

The following table shows the amount of accommodation available in the four hospitals which was actually utilised during 1928. On the vertical columns 100 per cent. would indicate that every available bed had been occupied on every day of the year. The black columns show the amount actually used. The figures, of course, represent an average over the whole year. Sanatorium beds and Smallpox accommodation are not included.


Thornhill.
Lochmaben
Annan
Eskdale.
Scarlatina
Diphtheria
Other
Scarlatina
Diphtheria
Other.
Scarlatina
Diphtheria
Other
Scarlatina
Diphtheria
Other.
%
100
90
80
70
60
50
40
30
20
10

The admissions to Hospital or Sanatorium of patients suffering from Tuberculosis will be found on page 16.

Tuberculosis.

The total number of notifications of Tuberculosis from the County Landward and the Burghs of Annan, Sanquhar, Lochmaben, Lockerbie, Moffat, and Langholm was 146—an increase of 8 on the figures for the previous year.

The annual number of notifications from the area administered, the percentage of Pulmonary and Non-pulmonary cases, and the estimated rate of notification per 1000 living is shown, from 1914 onward, in the following table :—

Year.	Total notifications.	Pulmonary.	Non-pulmonary.	Rate per 1000.
1914	 131	83·2%	16·8%	2·4
1915	 134	66·4%	33·6%	2·5
1916	 198	71·7%	28·3%	3·4
1917	 171	68·4%	31·6%	2·6
1918	 157	74·5%	25·5%	2·4
1919	 139	68·3%	31·7%	2·3
1920	 127	74·0%	26·0%	2·2
1921	 138	70·0%	30·0%	2·3
1922	 118	68·6%	31·4%	2·0
1923	 134	63·4%	36·6%	2·3
1924	 151	58·9%	41·1%	2·5
1925	 156	70·0%	30·0%	2·6
1926	 140	50·0%	50·0%	2·3
1927	 138	60·1%	39·9%	2·3
1928	 146	66·4%	33·6%	2·4

The death-rate from all forms of Tuberculosis in the area was 1·064 per 1000 (Pulmonary 0·828, Non-pulmonary 0·236). The corresponding rate in 1927 was 1·109. The rates since 1891 are shown in the following table :

Death-rate from all forms of Tuberculosis per 1000.

	Pulmonary.	Non-pulmonary.	Total.
1891-1910 (mean)	1·647	0·692	2·339
1911-1920 (mean)	1·028	0·353	1·381
1921	0·839	0·117	0·956
1922	0·859	0·214	1·073
1923	0·910	0·240	1·150
1924	0·699	0·290	0·989
1925	0·921	0·301	1·222
1926	0·693	0·270	0·963
1927	0·722	0·387	1·109
1928	0·828	0·236	1·064

A suggestion made by the National Association for the Prevention of Tuberculosis that a series of lectures should be given in the County by their Assistant Medical Commissioner, Dr Harley Williams, was laid before the Public Health Committee, who instructed me to make the necessary arrangements. The lectures were given during November, and on the conclusion of the tour I reported as follows :—

"I have to report that, in accordance with the instructions of the Public Health Committee given me on 26th September, I arranged a series of lectures throughout Dumfriesshire by Dr Harley Williams, Assistant Medical Commissioner to the National Association for the Prevention of Tuberculosis.

Dr Harley Williams' tour in the County lasted from 12th to 29th November. During that period he addressed meetings in Sanquhar, Kirkconnel, Thornhill, Wallacehall Academy, Moniaive, Moffat, Lockerbie, Lochmaben, Annan, Gretna, Langholm, and at Lochmaben Sanatorium.

Audiences of from 60 to 200 attended, the average being over 100. The lectures were given in popular language, and illustrated by cinematographic films, showing the conditions under which tuberculosis is spread, the methods adopted at Leysin and elsewhere to utilise sunlight in the treatment of the disease, the protection of the milk supply, and other aspects of the problem. They afforded the public an excellent opportunity of hearing the ideals of the Anti-tuberculosis campaign described in a simple and interesting way."

Details of the work during 1928 are given in the following report by Dr W. S. I. Robertson :—

"During the year ending 31st December, 1928, 146 cases of Tuberculosis were notified to this Department. Of these,

97 were Pulmonary ...	42 Male.	55 Female.
49 were Non-pulmonary ...	23 Male.	26 Female.
146	65 Male.	81 Female.

The Non-Pulmonary cases were classed as follows :—

Superficial Glands	22
Bones and Joints	8
Abdomen	6
Spine	6
Meninges	4
Kidney	1
Lupus	2
	49

Seven cases (classed as Pulmonary) suffered from Other Tubercular Affections in addition to the Lung Lesion.

The Quarterly Incidence of cases was as follows :—

First Quarter	34
Second Quarter	41
Third Quarter	39
Fourth Quarter	32
	146

The Age-incidence of cases was as follows :—

	Under 1.	1 and under 5	5 and under 15	15 and under 25.	25 and under 45	45 and under 65.	65 and over	Total.
Pulmonary.								
Male	.....	1	8	4	15	10	4	42
Female.	.....	...	8	12	24	9	2	55
Non-pulmonary.								
Male	.....	5	9	4	1	4	....	23
Female	.....	9	12	2	2	1	.....	26
	.....	15	37	22	42	24	6	146

Cases occurred as follows in the five Districts and six Burghs :—

Districts.	Pulmonary.	Non-Pulmonary.	Total.
Annan	26	11	37
Dumfries	18	12	30
Thornhill	17	10	27
Lockerbie	9	5	14
Langholm	1	1	2
Burghs.			
Annan	6	4	10
Langholm	6	2	8
Moffat	5	.....	5
Lockerbie	4	1	5
Lochmaben	4	1	5
Sanquhar	1	2	3
	97	49	146

Occupation.—As regards occupation, 34 were engaged in domestic duties, 9 as labourers, 6 in farm work, 3 as miners, 2 in shops, 2 in mills, 2 as railway workers ; while the occupations of doctor, baker, mason, typist, gardener, blacksmith, clerk, drover, and hawker furnished 1 case each.

During the year the disposal of cases was as follows :—

Admitted to Lochmaben Sanatorium	65
Admitted to Dumfries and Galloway Royal Infirmary	18
Admitted to Carlisle Infirmary	1
Admitted to National Sanatorium, Bournemouth	1
Admitted as Inmates of Crichton Royal Institution	14
Left County	6

Sixty-one cases died during the year, 40 of whom were notified in 1928 and 21 in previous years.

Shelters were occupied by 20 cases, and 29 were in receipt of medical comforts."

Venereal Diseases.

Dr W. S. I. Robertson reports as follows :—

" During the year 74 new patients were examined at the Clinic at Kirkbank, while 29 patients continued treatment. Of the new cases, 26 were cases of Syphilis (19 male, 7 female), 42 were cases of Gonorrhœa (39 male, 3 female), and 6 (3 male, 3 female) were found to be non-venereal.

5 of the Syphilis cases were congenital.

2 cases of Vulvo-vaginitis were treated during the year and cleared up satisfactorily.

The ages of new patients ranged from 6 months to 62 years.

The attendances for the year totalled 552, exclusive of daily attendances for irrigation.

Treatment of Syphilis was by means of Salvarsan and its derivatives ; Neokharsivan and Kharsulphan being used for intravenous and intramuscular injection respecttively. The latter method is especially suitable for children owing to the difficulty of keeping them still and the small size of their veins. Some, however, actually prefer the intravenous method. Sulfoxyl-Salvarsan was administered in one or two cases with a persistent Wassermann reaction. Preparations of Bismuth and Mercury were also employed, either in conjunction with the above, or in the very few cases where any intolerance was shown to the arsenical preparations. The Iodides were also used, chiefly in the intervals of arsenical treatment.

Gonorrhœa was treated by local antiseptics of various kinds, chiefly Potassium Permanganate, in conjunction with medicinal and vaccine therapy.

The Clinic is open daily for irrigation purposes, as owing to working conditions patients are in many cases unable to attend at fixed hours. Distance from the Clinic in some cases prevents the daily attendance of Gonorrhœal patients for irrigation. In such cases treatment is carried out under supervision of the patient's doctor, with attendance at the Clinic at intervals. The question of distance might be a matter for consideration in the case of any large public works involving large numbers of employees being undertaken in any of the areas served by the Clinic. In the case of Syphilis, where injections are given at weekly intervals, this difficulty seldom arises.

Though there is usually a definite history obtainable from patients, the information given may be classed as the truth, the half truth, and anything but the truth. In the latter case an appreciation of the history as an effort of fiction almost invariably leads to the real facts being disclosed.

The co-operation of the patient is an important point, as there is no control of his or her movements in the intervals of treatment. While the importance of care in relation to others is always stressed, much depends on the intelligence and conscience of the individual concerned, and as these are varying factors, it can only be hoped that instructions are adhered to.

The disadvantage of being unable to deal, except voluntarily, with the source of infection is a great hindrance in checking the spread of Venereal Disease. Each patient may be looked upon as a symptom of disease in someone else, and the comparative futility of treating symptoms as they arise, and leaving their source untouched, is obvious.

All that can be done at present is to convey, through the patient, a strong recommendation to seek medical advice as soon as possible, but this aspect of the question is a difficult, and. at times, delicate problem.

Attendance is regular as a rule, except in a few cases where working conditions make this impracticable.

Laboratory examinations in connection with the Clinic during the year numbered 163—comprising 74 Wassermann tests, and 89 examinations for Gonococci. None of the patients suffering from Syphilis were at such an early stage as to necessitate examination for Spirochæta Pallida.

Practitioners were supplied with Salvarsan derivatives when required.

I should like to express my thanks to Mr Lees, of the V.D. Department, Royal Infirmary, Edinburgh, for his ready assistance in dealing with cases which are beyond the scope of an out-patient Clinic

W. S. I. ROBERTSON."

Maternity and Child Welfare.

MIDWIVES (SCOTLAND) ACT, 1915, AND MIDWIVES AND MATERNITY HOMES (SCOTLAND) ACT, 1927.

Notice of intention to practise within the County Area (including the Burghs of Annan, Sanquhar, Lochmaben, Moffat, Lockerbie, and Langholm), as required by Section 18 of the principal Act, was given by 13 midwives. They were :—

(1) Mary Waugh, Throughgate, Dunscore.
(2) Jean Armstrong, 102 High Street, Dumfries.
(3) Doris Lilian Berry, Nethermill, Parkgate.
(4) Jane Clark, 14 Church Crescent, Dumfries.
(5) Carina Gilruth, Johnstone Park, Dumfries.
(6) Mary Melbourne, 39 Irish Street, Dumfries.
(7) Rachel Porteous, Gasstown, Dumfries.

(8) Catherine Bruce, Alexandra Cottage, Kirkpatrick-Fleming.

(9) Sarah Ferguson, F West 1, Gretna.

(10) Amy Grace Hurst, 26 The Rand, Eastriggs.

(11) Margaret Smith, 43 Victory Avenue, Gretna.

(12) Mary Hastings Johnstone, Thistle Cottage, Lochmaben.

(13) Alice M. Hastie, Eran Cottage, Gretna Green.

The number of notified births attended by midwives was 73. One death of an infant within 10 days of birth occurred in a midwife's practice, out of a total of 36 such deaths.

One still-birth occurred in a midwife's practice, out of a total of 41 still-births.

One case of Ophthalmia Neonatorum occurred in a midwife's practice, out of a total of 7 in the whole area.

No cases of Puerperal Sepsis were reported among women attended by midwives.

Medical aid was summoned by midwives in 15 cases, in accordance with the provisions of Section 22 of the Midwives (Scotland) Act, 1915. Those emergencies were :

In respect of Mothers.		In respect of Infants.	
Abnormal Presentation	3	Discharge from Eyes	3
Adherent Placenta	2	Asphyxia	1
Placenta Prævia	1		
Pelvic Deformity	1		
Purulent Discharge ...	1		
Prolonged Labour	1		
Ruptured Perineum	1		
Tachycardia	1		
Total	11	Total	4

Maternity Homes.—None are registered within the area.

Notification of Births Acts, 1907-1915.

The total number of Births registered in the County Landward, and in the Burghs of Annan, Sanquhar, Lochmaben, Lockerbie, Moffat, and Langholm, during 1928 was 1104.

The total notified in the same area was 1144. This includes 41 still-births which are notifiable but not registered. If those be deducted, the number of live births notified is 1103, or 1 less than the number registered.

The details of notification were :—

By Medical Practitioners	961
By Midwives	73
By Health Visitors and District Nurses	38
By Parents	70
By Other Persons	2
Total	1144

OTHER CHILDREN REPORTED.

Transfers from other areas were :—

Children under 1 year	40
Children of 1 to 5 years	30
Total	70

In addition 50 children aged 1 to 5 years, regarding whom no notification had been received, were reported by Health Visitors and District Nurses.

The total number of infants under 1 year and children aged 1 to 5 years brought to the notice of the Department during 1928 is thus 1264.

Visitation and Supervision.—The number of visits and revisits made by Health Visitors and District Nurses during the year was 15,043, which is an increase of 2691 on the previous year. The details were :

	First Visits.	Revisits.	Totals.
By Health Visitors	96	1,651	1,747
By District Nurses	938	12,358	13,296
Total	1,034	14,009	15,043

36 infants died within ten days of birth.
64·7 per cent. of the infants visited were wholly breast-fed.
1·6 per cent. of the infants visited were partly breast-fed.
33·6 per cent. of the infants visited were artificially fed.

The chief pathological conditions noted were :—

A. AMONGST INFANTS.

Infectious Diseases	35
Ophthalmia Neonatorum	6
Other Eye Conditions	2
Rickets	4
Pulmonary Conditions	4
Cutaneous Conditions	3
Digestive Conditions	3
Congenital Defects	3
Jaundice	1
Bronchitis	1
Other Conditions	11

B. AMONGST MOTHERS.

Oral Sepsis	25
Puerperal Pyrexia	2
Other Infectious Diseases	5
Digestive Conditions	5
Nephritis	1
Phlegmasia Alba Dolens	1
Pelvic Abscess	1
Debility	1
Other Conditions	15

Medical Comforts were supplied to Expectant or Nursing Mothers, to Infants, and to Children under five in 45 cases.

Blind Persons Act, 1920.

I was instructed by the Public Health Committee during 1927 to report upon a number of blind persons resident in the County whose names had been submitted by the Glasgow and West of Scotland Mission to the Outdoor Blind. The visitation was carried out during 1927 and 1928, and the report completed in the latter year.

Persons who had died or removed from the County, and inmates of the Crichton Royal Institution being excluded, there remained fifty-three people presumably blind.

On investigation it appeared that forty-six of those could be classified as blind within the meaning of the Act, *i.e.*, "unable to perform any work for which eyesight is essential." The ages of those forty-six persons were :—

Age.	Persons.
5–15	3
15–25	2
25–35	3
35–45	5
45–55	3
55–65	10
65–75	11
75–85	8
Over 85	1
Total	46

It will be observed that only five, or 10·9 per cent., were under 25 years of age. Of those, 2 have been sent to the Royal Blind Asylum by the Education Authority, and 2 are non-educable mental defectives. Of those between the ages of 25 and 45, 5 were ex-soldiers, whose blindness was a war disability, and who had received special training at the instance of the Ministry of Pensions.

The majority of those visited were elderly persons, many of whom suffered from other disabilities as well as from blindness, and it was not always possible to obtain accurate information on the cause and progress of the disease. So far as I could ascertain, the etiology was as follows :—

Cause.	Number of Cases.
Injury in Civil Life	8
War Disability	5
Cataract	10
Glaucoma	5
Ophthalmia	5
Optic Atrophy	3
Tuberculosis	2
Congenital Causes (Non-Syphilitic)	2
Syphilis	1
Unknown	5
Total	46

Milk and Dairies.

MILK (SPECIAL DESIGNATIONS) ORDER (SCOTLAND), 1923.

The following premises were licensed for the production of graded milk during the year :—

District.	Premises.	Grade.
Thornhill	Knockenjig	Certified.
	Dalpeddar	Certified.
	Barr	Grade A. (T.T.).
	Auchenbainzie	Grade A. (T.T.).
	Glengar	Grade A. (T.T.).
	Drumcork	Grade A. (T.T.).
Annan	Swordwellrigg	Grade A. (T.T.).
	Roundbush	Grade A. (T.T.).
	Hannah	Grade A. (T.T.).
Lockerbie	Hunterhouse	Grade A. (T.T.).
	Halldykes	Grade A. (T.T.).
	Holms	Grade A. (T.T.).
	Annanbank	Grade A. (T.T.).
	Blackford	Grade A. (T.T.).

All licensees were kept under supervision during the year, their premises and methods scrutinised, and the statutory tuberculin tests carried out. Details of the visits paid, samples examined, and tests made will be found on page 50.

The results of bacteriological examination of samples of milk of Special Designations will be found in the following table :—

BACTERIOLOGICAL EXAMINATIONS.

A.—Bacteria per cubic centimetre.

Grade.	Under 10,000 per c.c.	10,000 to 30,000 per c.c.	30,000 to 100,000 per c.c.	100,000 to 200,000 per c.c.	Over 200,000 per c.c.	Count unreliable.*
Certified	10	....	.....	....	....	.....
	100%	....	.....	.....	.....	.....
Grade A. (T.T.)	92	16	9	2	5	3
	72·4%	12·6%	7·1%	1·6%	3·9%	2·3%

* Spore-bearing organisms spreading over plate.

B.—Presence of Bacillus Coli.

Grade.	Absent from 0.1 c.c.	Present in 0.1 c.c.	Present in 0.01 c.c.	Present in 0.001 c.c.
Certified	10	....	.....	.....
	100%	.....	.....	....
Grade A. (T.T.)	87	20	10	10
	68·5%	15·7%	7·9%	7·9%

Details of the chemical composition of those samples will be found in the Analyst's Report, page 101.

One case was dealt with under the provisions of Section 10 of the Order. A producer who had been licensed in 1926 to sell Grade A. (T.T.) milk, whose herd had been regularly tested and whose licence had been renewed in 1927 and 1928, was requested by me to remove from his herd ten cows which had reacted to the Tuberculin Test during the summer of 1928. This he failed to do, and I reported the case to the Public Health Committee.

A special meeting was held to discuss the report, the licensee being present, and after full consideration the

Committee unanimously decided that the licence should be revoked.

An appeal to the Scottish Board of Health was then intimated by the licensee. The Board confirmed the Committee's decision that the licence should be revoked.

An interesting point arose as to the value of the acidity test in fresh milk, and the investigations made are described on pages 49 and 104. The question is an interesting one, and may be of practical importance to dairymen. I hope to have further observations made regarding it in the County Laboratory when time permits.

CLEAN MILK COMPETITION.

A clean milk competition was held during the spring. On its termination I reported as follows :—

"Dumfries, 9th July, 1928.

Dear Sir,

Clean Milk Competition.

For the information of the Public Health Committee I now submit a detailed report on this competition.

The objects of the competition were :—

(1) To stimulate increased consumption of milk by attaining and maintaining the highest possible hygienic standard, and to satisfy consumers that this is being accomplished.

(2) To demonstrate that the personal element and the methods employed in collection and handling of milk are the chief factors which determine its hygienic quality.

(3) To promote co-operation between producers and the Public Health Department in the administration of the Bye-laws and Order made under the Milk and Dairies (Scotland) Act, 1914, and other enactments affecting the production of milk.

There were 22 entries :—

From Thornhill District	4
From Dumfries District	6
From Annan District	5
From Lockerbie District	7
Total	22

Competitors were known by numbers only, names and addresses were not disclosed.

Between 15th February and 16th May three surprise visits were paid to the premises of each competitor, the cows, buildings, equipment, and methods of milk production were scrutinised, and marks allocated on a score card. On each visit a sample of milk was taken, brought to the County Laboratory, examined chemically and bacteriologically, and marks allotted according to the results. At the end of each round of the competition a circular was sent to every competitor showing the marks obtained under each heading, and, in addition, a special circular was sent after the first round indicating the principal faults observed and means of correcting them.

The results of the competition were very satisfactory, and the standard of milk production appears to have improved definitely during its course, though it is only right to state that the standard, even on the first round, was generally high.

INSPECTION.—The maximum obtainable on each round was 500 marks. The following table shows the marks obtained under this heading under each round :—

Marks.	First Round.		Second Round.		Third Round.	
	Competitors.	%	Competitors.	%	Competitors.	%
400 and over	4	18·2	12	54·5	16	72·8
350–400 ...	12	54·5	9	40·9	5	22·7
300–350 ...	5	22·7	...	...	...	...
Under 300...	1	4·5	1	4·5	1	4·5
Total ...	22		22		22	

The increase in the number of competitors obtaining 400 marks or over from 18·2 per cent. on the first round to 72·8 per cent. on the final round shows a very gratifying improvement. It was specially evident in regard to actual milking methods. The average marks obtained for this were on the first round 58 per cent., on the second round 75 per cent., and on the final round 77 per cent. of the maximum obtainable.

LABORATORY EXAMINATION.—The results of the laboratory examination of milk samples were very satisfactory. The actual improvement noted in the course of the competition was less marked than might have been expected. but that is due to the fact that the results were wonderfully good even on the first round. The following table shows the total number of organisms per cubic centimetre found in the samples examined :—

	First Round.		Second Round.		Third Round.	
	Samples.	%	Samples.	%	Samples.	%
Less than 5000 per c.c	6	27·2	13	59·0	12	54·5
5,000– 10,000 ,,	5	22·7	3	13·6	3	13·6
10,000– 30,000 ,,	6	27·2	3	13·6	4	18·8
30,000–100,000 ,,	5	22·7	3	13·6	3	13·6
100,000–200,000 ,,	...	...	...	...	...	...
Total	22		22		22	

It will be noted that all the samples examined would have passed the "Grade A" standard, and the majority would have satisfied that for "Certified" Milk.

The results of the examination for Bacillus Coli, the bacillus specially associated with manurial pollution, were as follows :—

	First Round.		Second Round.		Third Round.	
	Samples.	%	Samples.	%	Samples.	%
Absent from 1 c.c.	16	72·7	17	77·2	18	81·7
Absent from 0·1 ,,	3	13·6	3	13·6	3	13·6
Absent from 0·01 ,,	2	9·0	1	4·5	...	...
Absent from 0·001 ,,	1	4·5	...	...	1	4·5
Present in 0·001 ,,	...	...	1	4·5	...	...
Total	22		22		22	

All the samples examined except three would have passed the "Grade A" standard, and all except six that for "Certified" Milk.

The average content of Milk Fat was 3·9 per cent. on the first round, 3·7 per cent. on the second, and 3·4 per cent. on the third. This fall is presumably seasonal, but even the lowest figure is quite satisfactory. No sample examined during the competition showed less than 3 per cent. of Milk Fat.

GENERAL.—Throughout the competition the best marks were obtained by the smaller dairies. This is apparently due to their having a smaller number of cows per milker than the large herds. The total number of entries, however, is much too small to justify one in speaking definitely on this point.—Yours faithfully,

(Sgd.) JOHN RITCHIE.

County Buildings, Dumfries,
13th July, 1928."

Reference to other aspects of the competition will be found on pages 40 and 104.

VETERINARY INSPECTOR'S REPORT.

Messrs F. A. Davidson, M.R.C.V.S., and G. A. Sangster. M.R.C.V.S., County Veterinary Inspectors, report as follows :—

" Recent legislation with regard to milk and meat production made it necessary for the Veterinary Staff to make exhaustive enquiry into the present standard of premises, methods, etc., within the County. This was practically completed towards the end of 1927, and as a result much valuable information has been collected for future use. It will also be possible to apply the recent enactments with reasonable fairness and minimum interference of trade. The comparative completion of this detailed review gave us more time to remedy the defects it revealed, and there is no doubt that this has resulted in a greater advance in production during the past year than any previous period.

We are overhauling, when other work permits, the existing administrative machinery and records to meet the new conditions, and though still far from perfect the position is such that we are able to devote much more time in the actual field of production. Thus it is possible to see that premises are being constructed on up-to-date practical lines, and much greater control has been kept over the production of milk and meat, thus eliminating to a greater extent contamination by disease and bad handling.

No reports were furnished during the years 1926 and 1927 owing to changes in the staff, which, as the County is unofficially divided, affect administration considerably, therefore we have found it necessary to make several references to these years in the present report.

Milk and Dairies (Scotland) Act, 1914.

The dairy bye-laws were drawn up during 1925 and ultimately adopted by all the District Committees and several Burghs in 1926. Towards the end of 1925 we commenced visiting all premises for which applications to register were made, and detailed reports of the structural conditions, etc., were submitted. As it was realised that this would take some considerable time, the applications were divided into two groups :—

(a) Premises from which milk or cheese was sold wholesale or retailed in large quantities.

(b) Premises from which butter was produced during part of the year.

Group (a) was dealt with first, and the reports completed during 1926, since when applications have been reported on as soon as possible.

Group (b), however, was an unknown quantity, and there is no doubt that the majority of the farming community failed to understand what was exactly required as regards this particular trade. The applications under this heading varied considerably in the various districts according to the agricultural nature of the land, so that the number from Dumfries and Thornhill were comparatively few, while those from Annan, Lockerbie, and Langholm ran into several hundreds, and it has been found impossible to complete the reports on a large number of these applications. In order to save time and expense we now only deal with them when other work calls us to the farm or district, as it is much more important to concentrate on the inspection of large herds during the winter months and the work done during the summer on the reconstruction of premises is increasing. There is no doubt that butter is produced during some part of the year on the majority of premises where a cow or cows are kept and milk or cheese is not sold.

The reports on premises in group (a) were classified according to their structural condition, as follows :—

Class 1.—Conformed to the bye-laws.

Class 2.—These did not conform to the bye-laws in every respect, but were registered provisionally. Improvements to be effected as soon as possible.

Class 4.—The conditions were such that it was recommended that registration be refused.

The first and last classes require no further comment, and the numbers in each were comparatively few. Class 2, however, contains the majority of premises in the County, and the defects vary through a wide range. A general analysis of this group gives a fair idea of the existing standard of structural conditions throughout the County.

Cowsheds.

The first point of interest is that very few byres failed to reach the standard required for floor and cubic space, but it must be remembered that these are very moderate, especially for existing premises.

There is no doubt that, generally speaking, the worst defect of all is ventilation, and as the cubic spaces asked for are low, it is essential that this should be very efficient. We have found that the ventilating system is usually entirely insufficient, or of a very bad type, and with a cubic space of 350-500 cubic feet per cow it is necessary that the air should be changed several times during an hour to obviate vitiation. The oftener the air has to be changed the greater the risk of draughts, therefore we found that we had to get a system that would make sure that no currents of air were striking directly on the cows. We have experimented in this direction during the last two years and have now found a satisfactory solution, though the reconstruction of existing premises is extremely difficult. Farmers are now beginning to realise that draughty or overheated byres, especially when the cows are going out and in during cold weather, are factors predisposing to such diseases as Mastitis and retention of the placenta.

Lighting is another bad feature not only as regards quantity but distribution. There can be no doubt that efficient lighting checks disease both from its own antiseptic properties and because it shows up dirty corners, etc. It also makes for the cleaner handling of milk, as dirty cows, utensils, methods, etc., can be more easily detected and rectified. It is essential, however, when putting new lighting into a byre that it should not be done haphazard but the ultimate effect carefully considered.

One problem which we have carefully gone into recently is the type and size of the internal fittings of the cowsheds, so as to effect the maximum cleanliness of the animals with the minimum of labour. We dealt with two main points, namely, the length and width of the stalls and the mode of tying, and the width and depth of the grips or channels. In the past we found that these had been put in with very little foresight and usually to a standard size, though in the majority of herds we find the animals vary in size considerably. We now, therefore, vary the stalls according to the type of cow we expect to be carried on any particular farm, stipulating definite standards. As regards grips, there is no doubt that the main cause of the filthy condition in which some cows are found is the damming up of the liquid effluent, which is then lashed all over the cow by her tail, and we strongly advocate the wide, shallow grip. Several of these were constructed a few years ago of various types, and after a prolonged trial all the farmers concerned had no complaints to make and considered them a tremendous improvement as regards the cleanliness of the cows, the reduced risk of injury, and the saving of labour.

The majority of the byres have now water laid on, but in many cases the supply is very poor, and in others it is not made full use of, as no hose has been installed. The installation of water bowls is now receiving more favour, and it is to be hoped that soon there will be very few premises without them.

The last point we shall refer to as regards the cowsheds is drainage and dung-steads. The latter are on the whole fair, but there is a tremendous amount of waste through bad retaining walls, therefore bad packing, inefficient drainage, and exposure to the weather. As regards drainage the general standard is fairly good, but in the past there has been an inclination to carry the byre drain so far and then allow it to empty anyhow, or into anything, without building a sediment tank. At the present moment there has been a boom in the use of ammonia for grass lands, especially on dairy farms, and it seems the height of folly to pay high prices for manures when a very similar product is daily going to waste.

Dairy and Dairy Scullery.

Here again we have the defects varying through a wide range, but on the whole the standard of construction is very good. Lighting is usually quite reasonable, but ventilation again is in the majority of cases of a bad type. A great number of places have a combined dairy and dairy scullery, but this system does not seem a very good one, as we find it very difficult to keep such a building as clean as it should be for the cooling and storing of milk. Practically all premises have made provision for cooling, but often the water supply and type of cooler does not appear very effective during the summer months. As regards equipment for cleansing and sterilising the dairy utensils, we have found that in practically all cases it consists of an open boiler, a tub, and cold water tap, and when the registration reports were made comparatively few premises, outside of those where cheese had been made, had steam pressure boilers installed.

We have pointed out what we consider the main defects, but viewing the conditions generally throughout the whole country, and dairying counties in particular, we have no doubt that the construction of dairy premises in Dumfriesshire is well above the average.

The standard of handling throughout the County can only be considered fair, but since the registration reports were made there has been considerable improvement.

There is no doubt that this state of matters exists almost wholly as the result of lack of education, and until this is rectified there will be no material improvement. Also there is a tendency to treat dairying purely as a side-line to other farming. No doubt the labour entailed in dairying is tremendous, but, if one considers the present depressed state of agriculture generally, it probably pays as well as, if not better than, most others, and it would appear a very short-sighted policy not to give it even more time and careful thought than is the general practice.

The past year has shown great improvements in the structural conditions of a large number of premises. Several completely new buildings have been completed or are on the way, others have been reconstructed in conformity with the bye-laws, and in quite a number of cases a start has been made by effecting a few improvements, the others to be completed later. As regards the last class the main things have been either improvements in ventilation and lighting, or the beam-filling of wall-heads and cement-facing of the walls and relaying of the floors.

In several instances improvements to the drainage and dung-steads have been effected.

As regards methods, perhaps the most noteworthy advance has been the installation at quite a number of premises of steam pressure boilers. Farmers are slowly realising that this type of hot water supply is far more economical, both as regards fuel and labour, than the old-fashioned open boiler, and no doubt repays the initial cost in a reasonable space of time. Further, dairymen know that with a steam pressure boiler sterilization of the utensils is much more assured during their absence than is the case with the other method.

There is also a decided improvement in other matters, such as the cleanliness of the byres, use of overalls, etc.

Clean Milk Competition.

The Veterinary Inspectors were approached towards the end of 1927 by the management of a local Creamery to act as judges in a Clean Milk Competition which they proposed conducting. It was ultimately decided, however, that it would be much better if this were conducted solely by the Public Health Committee of the County Council, especially as their staff could undertake all the necessary work. We considered as this was the first competition held in the County it would be advisable to restrict it to a period of three months in order to perfect the organisation. Twenty-two producers ultimately competed, and after a few preliminary visits together, to standardise the allocation of marks, each of the premises was inspected every month by one of us, two evening and one morning visit being made during the full period. At the time of the inspections, which were unexpected, we allocated the marks and took samples for bacteriological and chemical examination, these being as near as possible representative of the bulk and taken both at the cooler and from the railway churns. At the end of each month we compiled a table showing the details of the scores and the results of the examinations of the samples, a copy being sent to each competitor. Along with the first table we issued a report dealing with the faults noted during the first inspection and making suggestions for improvement.

The standard of the samples at the first visit were on the average very high for ordinary premises, but in spite of that the subsequent reports showed a decided all-round improvement. There is no doubt that in the majority of cases much good was done, and subsequent visits have shown that the work has borne fruit, except in one or two instances where the proper personal element is sadly lacking. Probably the hints adopted most readily are the washing of the cows' udders and the milkers' hands with a weak solution of a mild antiseptic, such as Potassium Permanganate, the discarding of cloths for wiping cans and straining milk, and a better sterilization of the dairy utensils.

We, as well as the producers, derived much useful information from the competition. The score card was based on one which is apparently in common use, but we altered it considerably, and in one particular allowed a much higher proportion of marks, namely, for the health and condition of the cows. However, the competition has shown that the card could still be altered with advantage, and this, we think, would probably make the marks scored at the farm agree more closely with those allocated for the samples. It was quite evident that one could expect very good bacteriological results when the condition of the dairy and the handling of the utensils was good, even if other factors were very moderate.

Another point on which the competition threw much light is the average cooling of milk, and the results led us to the conclusion that cooling generally during the summer months is very poor. We consider that with a good average water supply it should be possible to cool the milk within two degrees of the temperature of the water. The main defects in cooling are an insufficient supply, the pipes too near the surface of the ground, therefore the water often quite warm at the cooler, and the milk being run over too quickly. As regards the last point, in many cases we found that to run the milk at such a rate that it was properly cooled was impracticable, as it meant that the carrying pails full of hot milk from the byre had to sit some time before it could be cooled.

There is no doubt that much more good can be done by educational methods than by merely enforcing the legal requirements, and from this point of view the Clean Milk Competition was quite successful, but the manner in which we conducted this one encroached too much on other work, though the administrative part would now be comparatively simple.

Milk and Dairies (Scotland) Order, 1925.

This Order is being complied with reasonably well, and will be more so in the future, as we are constantly pointing out its requirements.

Veterinary Inspections of Herds.

Nothing of outstanding interest has occurred during the past three years. The only administrative difficulty which calls for any note is what diseases are likely to contaminate milk, as no very clear decisions have ever been made on this point. Perhaps this is just as well, as it allows the Veterinary Inspector to use his own judgment and experience, and no doubt each individual case should be dealt with on its merits.

Great difficulty has been experienced during the last three years in making the prescribed inspections, as the most of our time is taken up with work under the Diseases of Animals Acts, but we always make a point of fitting in herd inspections along with these visits as far as possible. It is also impossible to inspect many herds during the summer months. However, during the last year the release from much office work has made a considerable improvement, though the Clean Milk Competition and a large increase of producers, owing to the operations of a new Creamery in the district, unexpectedly interfered with the inspections.

The general condition and cleanliness of the cattle in the County reached a fairly high standard, and it is quite evident that much more attention is being given to these matters. Practical rationing is becoming much more general, and those who have adopted it, and the installation of water bowls in the byres, are finding the results very gratifying both as regards increased production and the elimination of digestive ailments. Unfortunately there is still a great tendency to overload the cows with bulky, indigestible food of a limited productive value, such as straw, bad hay, and turnips. Feeding straw and bad hay to milking cows is poor economy, and turnips should be only fed in limited quantities to ensure proper digestion of the concentrates. The cleanliness of the cows is gradually improving, both as a result of the inspections and the improvement of the structure of the stalls and grips.

From our observations during the last year or two Mastitis of a bacterial origin seems to be on the increase, and in some herds it has been of a very infectious nature, affecting a large percentage of the animals. The usual causal organisms are Streptococci, but recently we have found that another type of a chronic and mild nature is very prevalent. It appears definitely to be due to a Diplococcus which cannot be cultivated easily on the ordinary media on which Streptococci grow, and the acidity of the milk from the quarter drops even as low as 9 per cent., whereas in the ordinary "Weed" it increases usually up to about 21 per cent. or 22 per cent. This type is also very infectious, and we have given some assistance to veterinary practitioners and farmers with regard to its control, having had promising results from the use of Vaccines.

Other diseases which we meet are septic eruptions, injuries, etc., of teats and udders, retention of the placenta, and cases of diarrhœa. As regards Mastitis and other affections of the teats and udders, we usually impress upon the farmer not so much the legal requirements as the great danger to the other cows in his herd, with the result that our instructions of removing the animal to a separate house, washing of udders and hands with a mild antiseptic during milking, cleansing of stall floors and other preventative measures have immediate effect, and are much appreciated. Infectious abortion is no doubt on the increase, and at the present day is probably as big a scourge to the dairy farmer as Tuberculosis. This disease is a danger to the milk supplies owing to the chronic Genital disorders which follow it. and at the moment comparatively little seems to be done to stop its spread.

As regards cases of Diarrhœa, we have found that a very high percentage of the animals in Dumfriesshire suffer from Fluke disease of the liver with a resultant loss of condition and diarrhœa, and during the past two years we have investigated many such cases reported under the Tuberculosis Order, and almost invariably find eggs in the fæces. These investigations have resulted in large numbers of cattle being treated for this disease by the Veterinary Practitioners with very striking results, and the practice is definitely on the increase.

As regards the disposal of milk from diseased animals, it is our practice to have the milk from an acute case destroyed by mixing with disinfectant and pouring down the drain. In the milder cases, or more chronic stages of the disease. we advise the feeding of the milk from apparently healthy quarters to pigs and calves, after it has been brought to the boil, as no doubt much of the digestive and other troubles of calves is due to feeding them with the products from such cows. The milk from cows with Mastitis we usually control by the state of the affected quarter and the bacteriological examination of the milk from the apparently sound ones. This latter precaution seems very essential as regards the type of "Weed," which is apparently due to a Diplococcus.

Most farmers apparently do not realise that under

Section 14 of the Act it is necessary for them to report cows suffering from diseases likely to contaminate milk, but there is no doubt they do not usually sell the milk from such cases until recovery is more or less complete.

One point which might be noted is the lack of provision in practically all premises for the housing of ailing animals, and in recently constructed premises attempts have been made to rectify this. We often find that we have to turn an animal out of a good cowshed and know that it will be housed in some insanitary, badly ventilated corner, often meaning a fatal termination.

No attempt has been made to deal with Tuberculous cows under the Milk and Dairies (Scotland) Act, 1914, as the Tuberculosis Order of 1925 can be more effectively used, and the power to apply the Tuberculin Test under Section 22 has not been used.

The position in the County as regards Tuberculosis among dairy cows is very problematical, and there is no doubt that the number of reactors in individual herds will vary from practically nil to close on 100 per cent. The past few years has undoubtedly gradually seen the elimination of the very obvious "Screw," but with very limited opportunities for regular inspections little progress can be expected from clinical examinations of the herd without the earnest co-operation of the farmers. At present it is only possible to find a very few in the initial stages, and we have recently found that very often acid fast bacilli can be demonstrated microscopically in the milk from cows which show very little clinical alteration of the udder.

In the ordinary herds our efforts towards the elimination of Tuberculosis have been mainly devoted to advice in the handling, rearing, and segregation of young stock with the ultimate view of replacement of the existing diseased cows, and this practice is being gradually adopted. No doubt much damage has been done in the past through the pernicious habit of feeding calves with the raw milk from a cow with a bad quarter or which was not doing too well. Another point we draw attention to is the thorough disinfection of premises at various times during the year, and here we stress the great advantage to the farmer having a well-constructed byre with impervious floors and walls, which can be easily cleansed and disinfected. It should be realised that though milk equal to the standards laid down for Certified can be produced in very indifferent premises, yet up-to-date, well-constructed buildings are essential to the health of a herd and the saving of labour, and will no doubt repay the farmer on those points alone, irrespective of any improvement in the cleanliness of the milk. Much good can be done by the use of hot soda water and spraying with disinfectants to root out infection, but there is no doubt that the application of the blow-lamp, where possible, is the surest of all methods, especially where there is much woodwork and the walls are broken.

Milk (Special Designations) Order (Scotland), 1923.

There has been little alteration in the number of producers of milk under the above Order during the past year, one licence having been withdrawn and another granted. The latter was for premises which were previously licensed by a different occupier. The large increase of these producers during the last two years was not expected to continue, as the supply of Certified and Grade A. (T.T.) milk has been in excess of the demand for some time. Considering the constant criticism of the milk supply of the country, owing to the risk of tuberculous infection amongst children, it is difficult to understand this apathy of the general public towards a safe and reliable product, for which the producer receives only a very reasonable extra return. It would only be proper for those people who have in the past held up the consumption of milk by scaremonger tactics, based on unreliable observations, to give some impetus to the sale of this milk by the methods they previously adopted. The time has now arrived when the persons who are in close touch with the general public, especially with children, should educate them to discard many of the milk substitutes now on the market and so increase the consumption of all milk, especially the higher grades.

A striking example of the damage that can be done through faulty information is the recent discovery of the high food value of skimmed milk, large quantities of this article having been wasted for years owing to previous propaganda against it. There is no doubt that full milk is the best form of milk food, but one had only to consider the children of farm servants, who in the past used nothing but skimmed milk, and the fact that calves, at one to two months old, are usually fed on skimmed milk, to realise that the ban placed on this article in the cities was ridiculous.

The milk from all of the licensed dairies has been sampled on an average once a month during the past year. and no trouble has been experienced in keeping within the necessary standards. There is no doubt that the time has now arrived when it is essential that these standards should be made more strict in order to keep these milks on a higher grade than the average production from non-licensed herds.

The prescribed Tuberculin Tests have been carried out during the year, and we have put into effect any improvements which we have noted from our own or other Veterinary Surgeons' experiences. Two of these are worthy of note, namely, the use of concentrated broth at the retest of doubtful cases and an extra visit to examine the eyes six to nine hours after the second installation, as we consider that in the majority of reactors the ophthalmic reaction disappears considerably before the twenty-fourth hour. One of us has had considerable experience abroad of using the caudal fold as a site of injection. and after three years' experience in the use of the skin of the neck the conclusion is that the former is probably still the better site.

There are two important factors of Tuberculin Testing of herds to which we have been giving very serious consideration. These are the introduction of infection from contact with neighbouring premises and the period of incubation of the disease. Our recent experience has led to the conclusion that it is practically impossible for any dairy farmer to keep his herd clean unless his farm is entirely isolated from untested stock, either by natural barriers or double fencing. This is especially the case where the herd has been practically free for some time and the natural immunity appears to have partially disappeared. As regards the incubation period it would appear, from what we have noted during the last two or three years, that it is often months after exposure to infection before an animal sufficiently develops the disease to react to Tuberculin.

There has been much criticism recently in the Press of the reliability of the Tuberculin Test, and locally it has been said that it is not reliable enough to warrant its use; but we consider that, in the majority of cases where there have been unexpected reactions and the test has been blamed, if more careful inquiry had been made into the history of the herd and individual animals in it for some time previous to these reactions, a satisfactory solution would be found. As regards the desirability of its use, one has only to review the results from the whole country, both from the producer's and the consumer's point of view, to realise that until further advances are made no question can be raised as to its practical value. It should be realised that Veterinary Surgeons until recently have received very little assistance or encouragement to clear up various problems affecting the Tuberculin Testing of cattle, which they often meet and fully appreciate.

There was one interesting problem during the past year with regard to the keeping qualities of milk which was being sent to the south of England from one of the licensed herds in the County. The purchasers apparently controlled their milk supplies by the acidity test, based on the principal that milk with an acidity of 21 per cent. degrees and over was on the verge of souring. As we were quite satisfied from our examination of the premises and the milk at the producer's end that the complaints were unjustified and that the milk, which was being sent to their factory for baking purposes, was being wasted, we decided to investigate the problem.

In the first instance the routine samples brought in from the various herds were tested for acidity at the same time as the plates, etc., were inoculated for bacterial count and B. Coli, and the results were very interesting. Acidities varied from about 18 to 21 ~~per cent~~., and this was found in milk which showed a very low bacterial count and no B. Coli. The herd under question gave a particularly high acidity, even though the count was low and a careful clinical examination was made to rule out the presence of any cases of Streptococcal Mastitis. There was the possibility of chemical changes affecting the percentage, and it was decided that the County Analyst, Mr Hawley, would make the test on the individual cows at the farm immediately after milking. This was done, and the average results merely confirmed the previous high acidity. These facts were pointed out to the purchasers, and no further question was raised on this score. We have discovered since then that several other creameries work on this principle, and it cannot be too quickly realised that action taken as a result of a high acidity would in many cases be quite unjustified.

Unfortunately pressure of other work makes it impossible for the County Staff to follow the problem up further, but considering the results we have had from various herds in the County it would appear that a useful line of research would be the effect of the following two factors on the acidity of milk as it leaves the cow :—

(1) Milk recording and breeding for high butter fat percentage.

(2) Rationing of cows.

The new Research Institute for Dairying is apparently keen to elucidate the various mysteries connected with milk production, and this would appear a very suitable one for their purpose."

F. A. DAVIDSON.

G. A. SANGSTER.

Appendix to Veterinary Inspectors' Report, 1928.

I. Milk and Dairies (Scotland) Act, 1914.

(a) *Visits to Premises.*

District.	Thornhill.	Dumfries.	Annan.	Lockerbie.	Langholm.	Total.
Routine Inspections ...	214	183	143	93	5	638
Other Duties (Reconstruction, etc.)	41	3	141	33	4	222
Total	255	186	284	126	9	860

(b) *Registered Premises and Number of Cows.*

District.	Premises—Class.					Cows.
	1.	2.	3.	4.	Total.	
Thornhill	13	102	113	28	256	5297
Dumfries	16	71	47	22	156	4364
Annan	14	92	80	22	208	1549
Lockerbie	17	66	80	...	163	2806
Langholm	2	23	73	...	98	608
Total	62	354	393	72	881	14,624

(c) *Milk Samples submitted for Bacteriological or Chemical Examinations.*

Tuberculosis.				Pathogenic Organisms, not Tuberculous.		B. Count and B. Coli.		Total.
Microscopical.		Biological.				Routine.	C. M. Competition.	
Pos.	Neg.	Pos.	Neg.	Pos.	Neg.			
14	74	1	10	31	39	49	66	284

(d) *Extract from Returns under Tuberculosis Order of 1925.*

(i) Origin of Reports from Registered Dairies.

Class of Premises.	Owner to Police.	Owner to Veterinary Inspector.	Veterinary Surgeons.	Veterinary Inspector.	Total.
Classes 1, 2, and 4 (Milk, etc.)	11	49	27	52	139
Class 3 (Butter, etc.) ...	3	11	10	7	31
Total	14	60	37	59	170

(ii) Results of Examinations and Post Mortems.

Class of Premises.	No Action.			Slaughtered and Compensation Paid.			
	Order did not apply.	Died.	Total.	Not Tuberculous.	Not Advanced	Advanced	Total.
1, 2, 4 ...	25	1	26	1	53	59	113
3	8	3	11	...	15	5	20

II. Milk (Special Designations) Order. 1923.

Class of Producers.				Visits.	Milk Samples.	Tuberculin Tests.				
Certified.	Grade A. (T.T.).	Pasteurised.	Retail.			Herds, one test.	Herds, two tests.	Routine Tests.	Interim Tests.	Total.
2	12	1	1	320	121	3	11	1169	67	1236

HOUSING.

New Houses.—Plans for construction of 30 new houses, and for additions or alterations to 109 existing houses, were received during the year. The districts from which they were sent are as follows:—

		New Houses.	Alterations, etc., on Existing Houses.
Thornhill District	.....	7	23
Dumfries District	.....	10	32
Annan District	....	9	20
Lockerbie District	.....	3	18
Langholm District	.....	1	16
Total	.....	30	109

Twenty-six "non-subsidy" houses were completed during the year, the details being:—

District		Three Rooms.	Four Rooms.	Five Rooms.	Six or more Rooms.	Total.
Thornhill	.....	6	....	.....	.....	6
Dumfries	. ..	4	.....	1	. ..	5
Annan	.....	.....	11	3	.....	14
Lockerbie	.....	. ...	.....	.....	1	1
Langholm	.. ..	.....	.....	.....	.....	.....
Total	....	10	11	4	1	26

Fourteen "subsidy" houses were completed—Thornhill 4, Dumfries 7, Annan 1, Lockerbie 1, Langholm 1.

Forty-three applications for grant or loan under the Housing (Rural Workers) Act, 1926, were received. Of those, 5 were from Thornhill District, 12 from Dumfries, 3 from Annan, 7 from Lockerbie, and 16 from Langholm.

In examining plans one sometimes observes that the importance of good lighting in living-rooms is not sufficiently recognised. The standard generally adopted is that of the Burgh Police (Scotland) Act, 1892, which requires that the lighting area, clear of sash and frame, shall be at least one-tenth of the floor area. This is a sufficiently lenient standard, and there seems no reason why lighting considerably in excess of it should not be provided in new houses. Nevertheless, plans submitted often show window space barely up to the minimum. This might be comprehensible if the window tax still existed, but the fact that it was repealed in 1851 should now be generally known. The only practical objection to large window space of which I am aware is that it may make it rather more difficult to keep a room warm during cold weather. But economy in fuel at the expense of sunlight and fresh air is a very shortsighted policy.

Intimations sent under Section 19 of the Public Health (Scotland) Act, 1897, regarding housing matters were as follows :—

	Thornhill.	Dumfries.	Annan.	Lockerbie.	Langholm.	Total
House in bad repair	15	26	27	13	1	82
House dirty.....	.....	3	.....	.....	.....	3
Defective water supply	7	7	1	10	3	28
Defective drainage	9	15	29	10	3	66
Lack of W.C. or E.C.	4	8	7	3	1	23
Accumulation of refuse	5	7	3	1	.....	16
Overcrowding	.....	.....	1	.....	1	2
Other	2	5	6	10	.....	23
	42	71	74	47	9	243

HOUSING (SCOTLAND) ACT, 1925.

One notice was served under Section 3 of this Act. The necessary work was thereafter carried out by the proprietor.

Nine notices were served under Section 20 (1).

No action under Section 111 was required.

HOUSING, TOWN PLANNING, &c. (SCOTLAND) ACT, 1919.

No action under Section 40 of this Act was required.

HOUSING (INSPECTION OF DISTRICT) REGULATIONS, 1910.

One thousand one hundred and fifteen inspections of dwelling-houses were made during the year. Eleven Closing Orders were made, and in one hundred and forty-two houses defects were remedied without the necessity of making a Closing Order.

The details are as follows :—

	Thornhill.	Dumfries	Annan.	Lockerbie	Langholm.	Total.
Inspections	382	239	299	144	51	1115
Houses considered unfit for habitation	3	5	.....	3	.....	11
Closing Order made	3	5	.....	3	.....	11
Houses made fit without Closing Order	23	37	36	38	8	142
Houses made fit after Closing Order	.....	.....	.....	.....	.....	.....

The complaints received regarding housing were :—

	Thornhill.	Dumfries.	Annan.	Lockerbie.	Langholm.	Total.
House in bad repair	11	10	15	9	.....	45
House dirty	1	2	....	.....	.....	3
Defective water supply	7	6	1	4	2	20
Defective drainage	1	1	8	.....	1	11
Lack of W.C. or E.C.	.....	.....	4	1	.....	5
Accumulation of refuse	3	5	3	.....	.....	11
Overcrowding		1	..	....	....	1
Other	4	2	7	2	1	16
	27	27	38	16	4	112

The problem of housing in Kirkconnel Parish continues difficult, the figures being much the same as in the previous year. The average number of persons per room during 1928 was estimated as :

	Houses.		
	1 Room.	2 Rooms.	3 Rooms.
Kirkconnel Village	3·8	2·6	2·0
Kelloholm Village	.....	.....	1·9
Remainder of Parish	3	2·4	1·4
Average	3·4	2·6	1·9

In Kirkconnel Village 50 per cent. of the one-roomed houses, 25·9 per cent. of the two-roomed houses, and 13·7 per cent. of the three-roomed houses had more than three occupants per room. In Kelloholm 13·6 per cent. of the three-roomed houses were in the same condition, while in the rest of the parish 19 per cent. of the two-roomed houses had more than three occupants per room.

Overcrowding affects health, directly and indirectly. In the first place, an overcrowded room cannot be properly ventilated. This is one of those truisms which are generally neglected until experience shows that they are really true. Good ventilation is not merely desirable to avoid the inconvenience caused by a stuffy atmosphere, it is of fundamental importance for the preservation of health. The air in an overcrowded room becomes hot, moist, and stagnant. The skin ceases to function properly, loss of body heat is obstructed, the heart is overworked, and innumerable delicate bodily functions have to readjust themselves to new and unnatural conditions. In course of time those functions may become definitely disordered, appetite, sleep, and capacity for work all being adversely affected. Further, constant breathing of hot, moist air affects the mucous lining of the nose and air passages. It becomes congested and "boggy," and a much more favourable breeding ground for the germs of infectious disease than is normal healthy mucosa.

Should infection be introduced into an overcrowded house the chances of its spreading are greatly increased. Such diseases as are conveyed by "spray infection"—

pulmonary tuberculosis, measles, influenza, cerebro-spinal fever, and many others—are known to spread most easily in overcrowded communities. The investigations into outbreaks of cerebro-spinal fever in army huts during the war showed the paramount importance of allowing sufficient floor-space to each inmate if the disease were to be prevented.

The indirect evil effects of overcrowding, if less obvious, are of equal moment. Apart from those improvements in health which are the result of administrative action, the most important factor in any advance in national hygiene is an improved standard of decent living. It is just this standard which overcrowding tends to lower. Although many people may do their best in very discouraging circumstances, it is almost impossible to maintain the conditions which make for healthy life when nine or ten persons, adults and children of both sexes, occupy a couple of rooms, eating, sleeping, preparing food, and performing their toilette in constant, intimate proximity. It is deplorable that decent people should have to live in conditions which make a lowering of their standards almost inevitable, and in which references to the ideals of health appear cynical and inapposite.

During the latter part of the year the Thornhill District Committee had a housing scheme for Morton under consideration. It is proposed to erect a number of houses of bungalow type on a site on the outskirts of Thornhill. The other District Committees had also been enquiring into the need for fresh housing in their areas, and a considerable amount of information had been obtained.

WATER SUPPLIES.

Special Water Districts.

The report on the proposed new supply to Moniaive Special District was considered by the District Committee, and it was decided to proceed with the work, which entails the construction of a reservoir on the Barbuie Burn, the laying of a new main, and certain auxiliary works. Operations had not been commenced at the end of the year.

The supply to the KIRKCONNEL SPECIAL DISTRICT had given trouble for some time, as the population supplied is now greatly in excess of that for which the works were originally designed, and the contours over which the pipe line has to pass made it difficult to maintain full pressure. In addition, much trouble had arisen at the intake, which was apt to get blocked with gravel during floods, and required constant attention. In order to eliminate those sources of trouble the pipe has been extended about 293 yards up stream, so as to obtain a better head, and a new intake formed, which, it is hoped, will not be liable to accidental blockage. Those works should provide a better and more regular supply to the District.

In the PENPONT SPECIAL DISTRICT the distributing piping throughout the village has been renewed.

The proposed extension of the DUMFRIES LANDWARD SPECIAL DISTRICT referred to in last year's Report was approved by the District Committee, and has now been accomplished.

Analyses of samples from the supply to GLENCAPLE SPECIAL DISTRICT at the beginning of the year showed the presence of Nitrites, an unduly high amount of Free Ammonia and of suspended matter. This had first been noticed in the last quarter of 1927, and is referred to in the Report for that year. The reservoir was inspected and a number of samples taken at various points of the system. Nothing could be found to indicate any dangerous pollution, and it seemed probable that the condition was due to an excess of vegetable matter in the reservoir. It was cleaned out during March, and analyses made thereafter shewed no cause for complaint.

A proposal was made that the NETHERWOOD, KELTON, AND CRAIGS supply should be augmented by the addition of the estate water works owned by Lord Chilston, and the District extended to include the subjects which that supply at present serves. I reported in detail on the proposal on 23rd April, and pointed out that it would be necessary to obtain information on the condition of the pumps and pipe lines, the annual cost of pumping, and the practicability of linking up the pipes with the existing Netherwood, Kelton, and Craigs system. The District Committee decided to take no further steps in the matter.

During October there was a break in the pipe line which brings the water from Rockhall across the Lochar Moss to the Netherwood, Kelton, and Craigs District. It was repaired with the least possible delay, but considerable inconvenience was caused to consumers by the accident.

In the Blackshaw Special District the problem of supplying certain high-lying subjects has not yet been solved, and there are still complaints of an intermittent and unsatisfactory supply to Wardlaw Mains Cottages. The matter has now been referred to Mr W. C. Easton, M.Inst.C.E., who will report on it.

In the Lower Annandale Special District the chief problem encountered during the year was the supply of certain subjects in the north of Cummertrees, referred to in last year's Report. A hydraulic ram was installed by the Committee, but the difficulty is one which may not be easily solved.

The suggestion that the original scheme for supply to the West Canonbie Special District should be adopted was considered by the Langholm District Committee, but the cost appearing prohibitive, no action could be taken.

In the other Special Water Districts no matters of importance have arisen during the year.

Investigations were continued in the Hightae District, Lochmaben Landward, and the southern part of Dryfesdale, where, as noted in last year's Report, there are many properties in need of an improved water supply.

Several visits were made to Dunscore and the vicinity in hopes of finding a source within reasonable distance of the village which could be utilised as a public supply. So far, investigations have been unsuccessful. In view of the small rateable value of the village, no great capital cost could be incurred in providing works, and the possible sources examined have all been such as would entail a considerable expenditure on piping and probably the provision of filters in addition. The conditions at Dunscore are illustrative, on a small scale, of the difficulties which have hampered the provision of rural water supplies ever since the War. The capital cost of providing the necessary works and the burden of rates and taxes have proved more than could be met by the rate produced in the area to be supplied.

DISPOSAL OF SEWAGE AND POLLUTION OF RIVERS.

(1) Nithsdale.—No instance of serious pollution of the upper reaches of the Nith by coal washings was reported during the year.

The sewage works at Kirkconnel, as previously noted, are now dealing with considerably more sewage than was anticipated when they were constructed. So far, the dilution of the effluent after entering the river has been sufficient to prevent the occurrence of serious nuisance. Should the population of the Special Drainage District continue to increase as it has done in recent years, the adequacy of the present works will require serious consideration.

The provision of new sewage works at Sanquhar Burgh is still under consideration. The effluent from the Creamery at Sanquhar is still apt to be unsatisfactory, and has been the subject of correspondence several times during the year.

The new sewage works at Thornhill were completed during the year. They are situated at Holmhill, and consist of Grit Tank, Septic Tanks, and Silt Tank, whence the tank liquor passes to contact beds constructed of destructor clinker. The effluent from those passes to the river Nith.

When sewage was admitted to the works during July it was found that a considerable quantity of scum accumulated on the surface of the liquor in the septic tanks. Samples were taken, from which it appeared that about

90 per cent. of the dry substance of the scum consisted of fat, presumably coming from the bacon factory. Measures were taken to prevent this fat accumulating or reaching the filters, but it is admitted that its presence makes the proper treatment of domestic sewage more difficult.

Samples were taken from the sewage entering the works, and from the final effluent, during October and December. The first of those gave very satisfactory results, the second showed rather less complete oxidation, but in view of the fact that it takes some time before such works reach their full efficiency, little stress need be laid on this. Further samples will be taken. The filter beds were inoculated during Autumn with Achorutes Viaticus, and the result of the activities of those insects will be observed.

The works at the Arrol-Johnston Factory continue to give a satisfactory effluent.

The condition of the tidal portion of the Nith is unchanged.

The lack of proper facilities for disposal of sewage at Moniaive were referred to in last year's Report, in which it was noted that Mr W. C. Easton, M.Cons.E., had submitted a report on 30th December, 1927. This was considered by the Thornhill District Committee, who decided that in view of the cost involved by the new water scheme it was necessary to delay action regarding drainage in the meantime.

In consequence of a suggestion that the Wanlock Water was being seriously polluted with washings from the lead mines, I visited it along with Mr Hawley, Public Analyst for the County, took a number of samples along the course of the stream, and also from the Crawick and the Spango. Reference to those will be found on page 108.

(2) ANNANDALE.—Extensive alterations and improvements on the Burgh Sewage Works were undertaken by the Town Council of Moffat. Those were approaching completion at the end of the year. During the greater

part of the period of construction it was necessary to run crude sewage into the river. A series of samples were taken during October from the river above Moffat and at a number of points on its course between Moffat and the confluence of the Annan and Water of Milk. This was undertaken partly in order to determine how long the effects of sewage could be detected in the river, and partly to have a standard for comparison after the improved works are operative.

The results of the analyses will be found on page 100. It will be observed that so far as the test for Dissolved Oxygen absorbed in 5 days is concerned, the river appears to have recovered its purity rapidly, the figure for the sample at Baronhill Bridge, about 2½ miles below the burgh, being almost the same as that taken above Moffat. The increase on this figure at Shillahill presumably represents the effect of the Turnmuir Burn, which receives the effluent from Lockerbie Burgh sewage works. The condition of this burn had been unsatisfactory for some time, but a good deal of work was undertaken at the sewage works during the year and resulted in a very distinct improvement.

(3) Eskdale.—The Langholm works continue to give a satisfactory effluent. The state of matters at Rowanburn remains as formerly described.

MEAT INSPECTION.

Slaughter-houses.

There are ten private slaughter-houses in the County licensed in accordance with Section 33 of the Public Health (Scotland) Act, 1897. They are :—

(1) In Thornhill District.—Thornhill Village (2), Thornhill Station, Dunscore, Kirkconnel, and Moniaive.

(2) In Dumfries District.—Racks.

(3) In Annan District.—Dornocktown and Kirkpatrick.

(4) In Lockerbie District.—Templand.

The Special Sub-committee dealing with the proposed District Slaughter-house at Thornhill appointed Mr Gavin Paterson, Hamilton, as architect. He submitted plans, and a site was provisionally chosen near Thornhill Station. Difficulties in regard to disposal of sewage led to the abandonment of the site, and another has now been selected in Thornhill Village.

In the meantime meat inspection in the Thornhill District has to be carried on under the difficulties which result from the existence of a number of small slaughter-houses scattered over a wide area.

VETERINARY INSPECTORS' REPORT.

The Veterinary Inspectors report as follows:—

"MEAT INSPECTIONS.—It will be seen from the accompanying table of visits that this work has been greatly increased during the past year, and has resulted in a considerable increase in the amount of meat condemned as unfit for human consumption. Except in one district there are only odd slaughter-houses visited by the County Veterinary Inspectors, as the most of the killing is done in the slaughter-houses situated within the Burghs, and two kill sheep only for the London market. The particular district mentioned has a number of scattered slaughter-houses under private control, and the hours and days allowed for killing being very extensive it has made the inspection of meat very difficult. The whole question of meat inspection in this particular district is being reviewed, and during the coming year we expect the various difficulties will have been satisfactorily solved.

There has been an increase in the number of reports with regard to emergency slaughter, but it is safe to say that the majority of farmers do not realise their obligations in this respect, and butchers are also unaware that, by purchasing carcases slaughtered in emergency on unregistered premises, they make themselves liable to heavy penalties. However, recently there has been a great improvement, mainly due to the fact that Veterinary Surgeons when advising the slaughter of an animal through injury warn the farmer of what is required and often notify us on his behalf. Also we have been in much closer contact with slaughtermen recently through salvage under the Tuberculosis Order of 1925, and they, when called in to kill and dress an animal on a farm, advise the farmer to report."

F. A. DAVIDSON.
G. A. SANGSTER.

III. MEAT (SCOTLAND) REGULATIONS, 1924.

(a) *Number of Slaughter-houses, etc., and Visits made for Routine Meat Inspections and Emergency Slaughter.*

District.	Thornhill.	Dumfries.	Annan	Lockerbie.	Langholm.	Total.
Slaughter-houses, etc.	6	1	2	1	...	11
Visits	210	10	47	7	...	274

(b) *Carcases and Offal Condemned.*

Inspection.	Bovines.						Pigs.				
	Complete Carcases.	Qrs.	Heads.	Lungs.	Liver.	Other Offal.	Carcases.	Qrs.	Plucks.	Liver.	Other Offal.
Routine ...	17	17	15	16	16	15	...	...	...	...	...
T.B. Order of 1925 ...	19	8	12	13	9	12	...	...	...	...	...
Total ...	36	25	27	29	25	27	1	3	43	20	61

OFFENSIVE TRADES.

The premises licensed remain as during last year, viz. :—
(1) A Bone-boiling business at Thornhill.
(2) A Knackery at Mosspark.
(3) A Manure Factory at Mosspark.
(4) A Tallow-melting Factory at Racks.

Those have been inspected from time to time, and have been found to be well conducted. No action regarding them has been necessary.

COMMON LODGING-HOUSES.

Those number three, viz. :—
In Thornhill District—(1) Kirkconnel, (2) Thornhill.
In Lockerbie District—(1) Ecclefechan.

Eight inspections were made, and one notice sent regarding irregularities.

OTHER SANITARY WORK.

Special Scavenging Districts.

Attention was drawn to the conditions at the Ecclefechan dump, where the fencing had begun to give way under the pressure of refuse in the lower part of the gully. This was remedied.

No special action was necessary in the other Special Scavenging Districts.

The state of matters at Templand remains much as when reported on in previous years.

Complaints of an alleged nuisance from the carting of ash-pit and privy refuse from Victoria Terrace, Kirkpatrick-Fleming, to a dump at Cove Quarry have been the subject of investigation and report for several years. During 1925 the matter was referred by the complainant to the Scottish Board of Health, and on 20th March Dr F. Dittmar, one of the Board's Medical Officers, visited the locus and made a full enquiry. His report, dated 23rd

March, gave it as his opinion that "the complaints as to disease and of nuisance from the house refuse from the houses in Victoria Terrace have been made without adequate foundation"—a view identical with that expressed by the late Dr Maxwell Ross and by myself during the last four years.

In response to representations by residents in Powfoot that the influx of daily visitors during summer made the provision of a public convenience necessary to avoid nuisance, the question was considered by the Annan District Committee, and a small building with accommodation for both sexes erected near the end of White Row.

BURGH OF ANNAN.

Area, 383 acres.

Population.—At the Census of 1921 the population was 3928. The Registrar-General's estimate for 1928 is 3581.

Births.—Births registered in the Burgh during 1928 were 77. Corrected for transfers, the number is 76 (41 males, 35 females). The corrected birth-rate was 21·2 per 1000, which is a rise of 2·5 over that in the previous year. The averages for the last three decades have been :—

1891-1900	29·69
1901-1910	28·94
1911-1920	21·54

Three births, or 3·9 per cent. of the total, were illegitimate.

Deaths.—The number of deaths registered was 66. Corrected for transfers, the number is 70 (29 males, 41 females). The death-rate, corrected for transfers and adjusted for age and sex distribution, is 17·6—a considerable increase on that for 1927, which was 13·7. The averages for the last three decades have been :—

1891-1900	20·90
1901-1910	14·94
1911-1920	15·45

The deaths from various causes, age-periods and rates, are shown in the following table :

BURGH OF ANNAN.—DEATHS IN 1928.

Cause of Death.	All ages.	–1	1–	5–	10–	15–	25–	35–	45–	55–	65–	75–	85–	
Enteric Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	[illegible]
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	[illegible]
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	[illegible]
Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	[illegible]
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	[illegible]
Whooping-cough	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	1	...	...	...	...	...	...	...	...	...	1	...	...	[illegible]
Encephalitis Lethargica	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-spinal Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Epidemic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Phthisis	2	...	...	...	...	...	...	...	...	...	..	...	...	[illegible]
Tuberculous Meningitis	1	...	1	..	...	...	...	...	...	...	...	...	...	[illegible]
Abdominal Tuberculosis	...	...	...	...	...	...	...	...	...	...	...	...	...	.
Other Tuberculous Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malignant Tumours	13	...	...	...	...	...	...	1	1	5	3	3	...	[illegible]
Rheumatic Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meningitis (not C.S. or Tub.)	1	...	...	...	...	1	...	...	...	...	...	...	...	[illegible]
Apoplexy	6	...	...	...	...	...	...	...	...	1	2	3	...	[illegible]
Heart Disease	11	...	...	1	...	...	...	...	1	2	3	3	1	[illegible]
Diseases of Arteries	4	...	...	...	...	...	...	...	...	...	...	2	2	[illegible]
Bronchitis	2	...	...	...	...	...	...	...	...	...	...	2	...	[illegible]
Pneumonia (all forms)	6	1	...	...	...	...	...	...	1	1	3	...	...	[illegible]
Other Respiratory Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteritis (under 2 years)	1	1	...	...	...	...	...	...	...	...	...	...	...	[illegible]
Appendicitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Liver Diseases (not Malignant)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nephritis (Bright's Disease)	6	...	...	...	...	...	...	...	1	1	1	3	...	[illegible]
Puerperal Sepsis	...	...	...	...	...	...	...	...	...	...	...	...	...	.
Other Diseases and Accidents of Pregnancy, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of Early Infancy and Malformations	7	7	...	...	...	...	...	...	...	..	...	...	...	1·94
Suicide	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Violence (excluding Suicide)	1	...	...	...	...	...	...	..	...	...	1	...	...	[illegible]
Other Defined Diseases	7	1	...	...	...	...	...	..	...	1	1	3	1	[illegible]
Ill-Defined Diseases	1	...	...	...	...	..	1	...	...	...	...	...	...	0·27
Total	70	10	1	1	...	1	1	1	4	13	15	19	4	17·6

There were 10 deaths of infants under one year of age. The infantile mortality (deaths under one year per 1000 births) was 132. This is a considerable increase over that for 1927, which itself was high. No great emphasis can be laid on those variations, as the actual figures are small. It is worth noting, however, that during the ten years 1911-1920 the infantile mortality in Annan averaged 85; the average for the period 1921-1928 has been 93·7.

Infectious Diseases.—Thirty-one notifications of infectious disease were received, which is five more than in 1927.

Seven cases of Scarlatina and two of Diphtheria were notified and removed to Hospital. Four cases of Erysipelas, five of Chickenpox, and three of Primary Pneumonia were nursed at home.

There were six notifications of Pulmonary Tuberculosis and four of Non-pulmonary. Two of the former were removed to Sanatorium and two of the latter to Hospital.

The Registrar intimated receipt of 25 Objections to Vaccination.

The figures in the following table are abstracted from the return made to the Department of Health for Scotland :

BURGH OF ANNAN.

CASES OF INFECTIOUS DISEASE NOTIFIED TO THE MEDICAL OFFICER OF HEALTH.

DISEASE.	At all Ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 45	45 and under 65	65 and upwards.	Cases removed to Hospital.	Cases not removed to Hospital.
carlatina	7	...	2	1	2	2	...	...	7	...
iphtheria	2	...	...	2	...	...	...	...	2	...
rysipelas	4	...	...	...	...	2	1	1	...	4
hickenpox	5	2	2	1	...	...	...	...	...	5
rimary Pneumonia ...	3	...	1	...	1	...	...	1	...	3
ulmonary Tuberculosis	6	...	...	3	1	1	1	...	1	2
on-pulmonary Tuberculosis	4	...	3	1	...	...	...	...	2	2
Total	31	2	8	8	4	6	2	2	15	16

Housing.—The poorer class of houses in the Burgh have been kept under constant supervision by the Sanitary Inspector, and I have made several special visits of inspection along with him.

Two insanitary houses have been demolished during the year, two have been closed, one has been converted into a shop, one Closing Order has been made, and one representation with a view to a Closing Order.

Seven houses have been repaired under the provision of Section 3 (1) of the Housing (Scotland) Act, 1925.

There remain thirty-six defective houses which require attention—an improvement on the previous year, when the number was 47.

A total of 74 houses have now been built under the Council's Housing Scheme.

Water Supply.—Complaints were received during the earlier part of the year regarding shortage of water between 8 and 11 a.m. in the higher parts of the town. An expert water engineer was employed to report on the whole system. A few defects were discovered and remedied, and the expert recommended that the 6-inch pipe at the south end of Lady Street be connected to the 4-inch pipe on the south side of High Street. After this had been done complaints ceased. The Sanitary Inspector reports that there is now less waste than was formerly the case.

The reservoir, filters, storage tank, and mains have been supervised regularly, and any defects promptly remedied.

No complaints regarding the quality of the water have been received.

Slaughter-house.—This has been regularly visited, and always found clean and in good order. Shops and vans selling or conveying meat have been regularly visited and inspected by the Sanitary Inspector.

The following seizures of unsound meat were made during the year :—

Beef, 4 carcases—146 stone.

Mutton, 12 carcases—23 stone 10 lbs.

Plucks, 10.

Dairies, Cowsheds, and Milkshops.—There are one milkshop and two cowsheds in the Burgh. These have been kept under supervision and found in good order. Eleven retailers sell milk from premises outwith the Burgh.

Details of other sanitary matters will be found in the Sanitary Inspector's Report.

BURGH OF SANQUHAR.

Area, 349 acres.

Population.—At the Census in 1921 this was 1700. The Registrar-General's estimate for 1928 was 1759.

Births.—The number registered during the year was 38. Corrected for transfers it is 36 (17 male, 19 female). This is equivalent to a birth-rate of 20·5 per 1000, which is a reduction of 1·1 on that of the previous year.

The average rates for the three last decades have been :—

1891-1900	26·7
1901-1910	25·0
1911-1920	24·9

Illegitimate births numbered 1, or 2·8 per cent. of the total.

Deaths.—The deaths registered numbered 19. Corrected for transfers, the number is 24 (6 male, 18 female). The death-rate, corrected for transfers and adjusted for age and sex distribution, is 13·2 per 1000, as against 12·2 in 1927.

The average death-rates for the three last decades have been :—

1891-1900	17·02
1901-1910	18·19
1911-1920	14·70

The causes of death, age periods, and rates are shown in the following table :

BURGH OF SANQUHAR.—DEATHS IN 1928.

CAUSE OF DEATH.	All ages.	–1	1–	5–	10–	15–	25–	35–	45–	55–	65–	75–	85–	per
Enteric Fever . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhus Fever . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Whooping-cough . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	1	...	1	...	...	...	...	...	...	...	...	...	...	0·
Influenza	1	...	...	...	...	...	...	1	...	...	...	...	...	0·5
Encephalitis Lethargica .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-spinal Meningitis .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Epidemic Diseases .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Phthisis . .	1	...	...	...	...	...	1	...	...	...	...	...	...	0·5
Tuberculous Meningitis . .	1	1	...	...	...	...	...	...	...	...	...	...	...	0·5
Abdominal Tuberculosis. .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Tuberculous Diseases .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malignant Tumours . .	3	...	...	...	...	...	...	...	...	3	...	...	...	1·7
Rheumatic Fever . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	0·5
Meningitis (not C.S. or Tub.) .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Apoplexy	4	...	...	...	...	...	...	...	...	1	1	...	2	2·27
Heart Disease . . .	2	...	...	...	...	...	1	...	...	...	1	...	...	1·13
Diseases of Arteries . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bronchitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pneumonia (all forms) . .	1	1	...	...	...	...	...	...	...	...	...	...	...	0·56
Other Respiratory Diseases .	1	...	1	...	...	...	...	...	...	...	...	...	...	0·5
Enteritis (under 2 years) .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Appendicitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Liver Diseases (not Malignant)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nephritis (Bright's Disease) .	1	...	...	...	...	...	...	...	...	...	1	...	...	0·56
Puerperal Sepsis . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases and Accidents of Pregnancy, &c. . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of Early Infancy and Malformations . .	3	3	...	...	...	...	...	...	...	...	...	...	...	1·70
Suicide	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Violence (excluding Suicide) .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Defined Diseases . .	4	...	...	...	...	...	...	...	...	...	...	3	1	2·27
Ill-Defined Diseases . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL . . .	24	5	2	...	...	...	2	2	...	4	3	3	3	13·2

Infantile Mortality.—There were 5 deaths of infants under one year of age. The infantile mortality, calculated per 1000 births, is 139. That for the previous year was 53.

Infectious Diseases.—Sixty-four notifications of infectious disease were received. This is an increase of fifty over the figures for 1927, due partly to the fact that Scarlatina was prevalent during the year, and partly to the fact that thirty notifications of Chickenpox were received as against one during the previous twelve months.

Twenty-one cases of Scarlatina and two cases of Diphtheria were notified and removed to Hospital. Two cases of Erysipelas, thirty of Chickenpox, three of Primary Pneumonia, and two of Influenzal Pneumonia were nursed at home.

One case of Pulmonary Tuberculosis was notified and removed to Sanatorium. Three cases of Non-pulmonary Tuberculosis were notified; of those, one was removed to Hospital and the others treated at home.

The Registrar reported 7 Objections to Vaccination.

The figures in the following table are abstracted from the return made to the Department of Health for Scotland :

BURGH OF SANQUHAR.

Cases of Infectious Disease Notified to the Medical Officer of Health.

DISEASE	At all Ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65.	65 and upwards.	Cases removed to Hospital.	Cases not removed to Hospital.
Scarlatina	21	...	7	13	...	1	...	...	21	...
Diphtheria	2	...	2	...	...	...	...	...	2	...
Erysipelas	2	...	...	...	...	...	2	...	...	2
Chickenpox	30	3	8	18	1	...	...	...	...	30
Primary Pneumonia ...	3	2	1	...	...	...	...	...	...	3
Influenzal Pneumonia ...	2	...	...	...	...	1	1	...	...	2
Pulmonary Tuberculosis	1	...	...	...	...	1	...	...	1	...
Non-pulmonary Tuberculosis	3	...	...	3	...	...	...	...	1	2
Total	64	5	18	34	1	3	3	...	25	39

The County Sanitary Inspectors paid 23 visits to disinfect rooms, clothing, and bedding after cases of infectious disease had been removed to Hospital.

Housing.—Six plans shewing improvements and alterations on existing premises were reported on and submitted to the Dean of Guild Court.

Ninety-four visits of inspection were made to houses in the Burgh, and 6 intimations sent regarding defects. Smoke testing of new drainage was supervised in six cases.

Water Supply.—This has been satisfactory during the year. Periodic examinations have been made, and no cause for complaint has arisen.

Sewage Works.—The provision of new works is still under consideration by the Council. The present arrangements cannot be regarded as satisfactory.

Common Lodging-house.—This has been visited from time to time, and the general conduct of the business found satisfactory. A letter was sent regarding cleansing of walls and ceilings.

Slaughter-house.—This has been found clean and well conducted.

Milk and Dairies Act.—The premises registered, a Creamery and two Dairies, have been found well conducted. The effluent from the Creamery, however, has been found unsatisfactory on several occasions (see page 59).

Nuisances.—Inspections of 14 alleged nuisances were made, and 7 intimations served under Section 19 of the Public Health (Scotland) Act, 1897.

BURGH OF LOCHMABEN.

Area, 191 acres.

Population.—At the Census of 1921 this was 959. The Registrar-General's estimate at the middle of 1928 was 906.

Births.—The births registered in the Burgh numbered 22. Adjusted for transfer, the number is 27 (15 males, 12 females). The birth-rate for the year is 29·8 per 1000.

Five births, or 18·5 per cent., were illegitimate.

Deaths.—The deaths registered were 17. Adjusted for transfers, the number is 18 (7 males, 11 females). The corrected death-rate, adjusted for age and sex distribution, is 15 per 1000.

The causes of death, age periods, and rates are given in the following table :

BURGH OF LOCHMABEN.—DEATHS IN 1928.

Cause of Death.	All ages.	–1	1–	5–	10–	15–	25–	35–	45–	55–	65–	75–	85–	Rate per 1
Enteric Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping-cough	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	3	...	...	...	...	1	1	...	1	...	...	...	...	3·3
Encephalitis Lethargica	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-spinal Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Epidemic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Phthisis	1	...	...	...	...	...	1	...	...	...	...	...	...	1·1
Tuberculous Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abdominal Tuberculosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Tuberculous Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malignant Tumours	3	...	...	...	...	...	...	...	...	1	1	1	...	3·3
Rheumatic Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meningitis (not C.S. or Tub.)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Apoplexy	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Heart Disease	4	...	...	...	...	...	...	...	...	2	...	2	...	4·4
Diseases of Arteries	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bronchitis	1	...	...	...	...	...	...	...	...	1	...	...	...	1·1
Pneumonia (all forms)	2	...	...	...	...	...	...	...	...	1	1	...	...	2·2
Other Respiratory Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteritis (under 2 years)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Appendicitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Liver Diseases (not Malignant)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nephritis (Bright's Disease)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Sepsis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases and Accidents of Pregnancy, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of Early Infancy and Malformations	1	1	...	...	...	...	...	...	...	...	...	...	...	1·1
Suicide	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Violence (excluding Suicide)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Defined Diseases	3	...	...	...	...	...	...	...	1	1	...	1	...	3·3
Ill-Defined Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	18	1	...	...	...	1	2	...	2	6	2	4	...	15

Infectious Diseases.—Eleven notifications were received. One case of Scarlatina and two cases of Diphtheria were removed to Hospital, and one case of Diphtheria treated at home.

One case of Primary Pneumonia and one of Influenzal Pneumonia were treated at home.

Four cases of Pulmonary Tuberculosis were notified, and three of those removed to Sanatorium. One case of Non-pulmonary Tuberculosis was notified and removed.

The Registrar reported 2 Objections to Vaccination.

The following figures are abstracted from the return made to the Department of Health for Scotland :

BURGH OF LOCHMABEN.

CASES OF INFECTIOUS DISEASE NOTIFIED TO THE MEDICAL OFFICER OF HEALTH.

DISEASE.	At all Ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65.	65 and upwards.	Cases removed to Hospital.	Cases not removed to Hospital.
Scarlatina	1	...	...	...	1	...	...	...	1	...
Diphtheria	3	...	1	2	...	...	...	...	2	1
Primary Pneumonia ...	1	...	...	...	...	...	1	...	...	1
Influenzal Pneumonia ...	1	...	...	...	...	1	...	...	...	1
Pulmonary Tuberculosis	4	...	...	1	...	3	...	...	3	1
Non-pulmonary Tuberculosis	1	...	...	1	...	...	...	...	1	...
Total	11	...	1	4	1	4	1	...	7	4

Disinfection of rooms, clothing, and bedding was carried out in 5 instances. Four notices were served under Sections 50 and 53 of the Public Health (Scotland) Act, 1897.

Housing.—No plans for the erection of new houses or for alteration of existing houses were received.

Twenty-two visits of inspection under the Housing Acts were made. Ten intimations regarding housing defects and two regarding drains were sent.

The condition of the majority of the houses in Marjoribanks is still very unsatisfactory.

Water Supply.—In consequence of observations suggesting an excessive use of water. Mr W. C. Easton, M.Cons.E., was instructed to examine the system and report.

He discovered that the valves at the Town Hall and at Townhead gusset were both passing water. After those leakages had been stopped, it was possible to determine that any serious waste must be located in the length between Townhead and Marjoribanks.

Mr Easton also reported that the filters required attention. The old filter had previously been reported as unsatisfactory, as, being without a regulating valve, it was often working with an excessive head, and, in addition, there was reason to suppose that it was constructed of ungraded material. The new filter was giving only about half the supply that it gave in the previous year, the reduction being attributed to lack of clean sand and of sufficient labour to keep the filtering material in first-class order.

Sewage Disposal.—Visits of inspection were paid on various occasions to those works. A good deal of "ponding" has been noted from time to time on the south-east contact bed, in which the material seems to be disintegrating.

The effluent from the works has, however, been reasonably satisfactory. This may be due, in part at least, to the action of the Achorutes Viaticus, with which both beds are now heavily colonised.

Workshops.—Three visits were made to workshops. The conditions were found satisfactory.

Tents and Vans.—One inspection was made, and no cause for complaint was found.

BURGH OF LOCKERBIE.

Area, 453 acres.

Population.—At the Census of 1921 this was 2344. The Registrar-General's estimate for 1928 is 2179.

Births.—The births registered during the year were 42. Corrected for transfers, the number is 46 (21 male, 25 female). This is equal to a birth-rate of 21·1 per 1000 —2·1 above the rate for the previous year.

Four of the births were illegitimate, which is equal to an illegitimate birth-rate of 8·7 per cent.

The average birth-rates for the last three decades have been :—

1891-1900	26·7
1901-1910	21·3
1911-1920	20·4

Deaths.—30 Deaths were registered. Corrected for transfers, the number is 37 (21 males, 16 females). This when adjusted for age and sex distribution gives a death-rate of 15·5 per 1000, which is 1·5 above that of the previous year. The average death-rates for the last three decades have been :—

1891-1900	15·0
1901-1910	14·4
1911-1920	14·9

The causes of death, age periods, and rates are shewn in the following table :

BURGH OF LOCKERBIE.—DEATHS IN 1928.

Cause of Death.	All ages.	-1	1-	5-	10-	15-	25-	35-	45-	55-	65-	75-	85-	Rates per 1000
Enteric Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Whooping-cough	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Influenza	1	...	...	...	...	...	...	...	...	...	1	..	..	0·45
Encephalitis Lethargica	...	...	...	...	...	...	...	...	...	..	...	...	..	..
Cerebro-spinal Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Epidemic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Pulmonary Phthisis	3	...	...	...	...	1	...	...	1	...	1	..	...	1·35
Tuberculous Meningitis	...	...	...	...	...	...	...	..	..	..	..	..	..	..
Abdominal Tuberculosis	...	...	...	...	...	...	...	..	...	..	..	..	..	..
Other Tuberculous Diseases	2	...	...	...	...	1	1	...	...	...	...	..	..	0·90
Malignant Tumours	2	...	...	...	...	...	...	...	...	1	...	1	...	0·90
Rheumatic Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Meningitis (not C.S. or Tub.)	...	...	...	...	...	...	...	...	...	...	...	...	..	..
Apoplexy	4	...	...	...	...	...	...	...	...	1	1	1	1	1·80
Heart Disease	7	...	...	...	...	...	1	...	...	2	3	1	...	3·15
Diseases of Arteries	2	...	...	...	...	...	...	...	...	...	1	1	...	0·90
Bronchitis	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Pneumonia (all forms)	2	...	1	...	...	...	...	...	...	...	...	1	...	0·90
Other Respiratory Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteritis (under 2 years)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Appendicitis	1	...	...	...	...	...	...	1	...	...	...	...	...	0·45
Liver Diseases (not Malignant)	1	...	...	...	...	...	...	...	...	...	1	..	..	0·45
Nephritis (Bright's Disease)	3	...	1	...	...	...	...	...	...	2	..	...	..	1·35
Puerperal Sepsis	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Other Diseases and Accidents of Pregnancy, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of Early Infancy and Malformations	...	...	...	...	...	...	...	...	...	...	...	...	..	..
Suicide	1	...	...	...	...	1	...	...	...	...	...	...	..	0·45
Violence (excluding Suicide)	1	...	1	...	...	...	...	...	...	...	...	...	...	0·45
Other Defined Diseases	6	1	...	...	...	...	1	...	...	...	1	2	1	2·70
Ill-Defined Diseases	1	...	...	...	...	...	...	...	...	...	1	...	...	0·45
TOTAL	37	1	3	...	...	3	3	1	1	6	10	7	2	15·5

Infantile Mortality.—One death of an infant under 1 year of age was reported. The infantile mortality-rate is 22 per 1000 births. That for the previous year was 24. and the average since 1921 has been 63·5.

Infectious Diseases.—Sixteen notifications of infectious disease were received, this being an increase of eight over the previous year.

Three cases of Scarlatina and two of Diphtheria were notified and removed to Hospital. One case of Erysipelas and five of Chickenpox were nursed at home. Four cases of Pulmonary Tuberculosis were notified, one being removed to Sanatorium, and one case of Non-pulmonary Tuberculosis was removed to Hospital.

The Registrar reported 3 Objections to Vaccination.

The following table is abstracted from the return made to the Department of Health for Scotland :

BURGH OF LOCKERBIE.

CASES OF INFECTIOUS DISEASE NOTIFIED TO THE MEDICAL OFFICER OF HEALTH.

DISEASE.	At all Ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 45	45 and under 65.	65 and upwards.	Cases removed to Hospital.	Cases not removed to Hospital
Scarlatina	3	...	1	2	...	...	...	...	3	...
Diphtheria	2	...	...	...	...	2	...	...	2	...
Erysipelas	1	...	...	...	...	1	...	...	...	1
Chickenpox	5	...	1	4	...	...	...	...	...	5
Pulmonary Tuberculosis	4	...	...	...	2	1	...	1	1	3
Non-pulmonary Tuberculosis	1	...	...	...	...	1	...	...	1	...
Total	16	...	2	6	2	5	...	1	7	9

Housing.—Plans were passed by the Dean of Guild Court during the year in respect of 5 new houses, alterations to 1 existing dwelling-house, and for 4 other buildings.

Twenty-four houses in the Corporation's housing scheme were completed during the year.

Water Supply.—This is ample and of good quality. During the year a house-to-house inspection of fittings was carried out.

Sewage Disposal.—A considerable amount of work has been carried out at the sewage disposal works, the plant being reconditioned generally. The result has been a decided improvement in the effluent, which is now of a reasonably satisfactory quality.

Slaughter-house.—This has been kept under constant supervision. Additions to and improvements on the structure were made during summer.

Seventeen seizures of meat were made during the year.

Common Lodging-house.—This is a small establishment and well conducted. No action has been necessary during the year.

Dairies, Cowsheds, and Milkshops.—There are two registered Dairies. No action regarding them has been necessary during the year.

For details of other sanitary matters reference may be made to the Sanitary Inspector's report.

BURGH OF MOFFAT.

Area, 305 acres.

Population.—At the Census of 1921 this was 2426. The Registrar-General's estimate for 1928 is 2559.

Births.—The births registered during the year were 42. Corrected for transfers, the number is 33 (13 male, 20 female). The birth-rate is 12·9 per 1000 living, as against 9·8 in the previous year.

Three births, or 9·1 per cent., were illegitimate.

The average birth-rates for the last three decades have been :—

1891-1900	18·5
1901-1910	15·7
1911-1920	16·3

Deaths.—The deaths registered were 22. Corrected for transfers, the number becomes 23 (7 male, 16 female). The corrected death-rate, adjusted for age and sex distribution, is 7·3 per 1000, as against 8·6 in 1927.

The average death-rates for the last three decades have been :—

1891-1900	15·7
1901-1910	12·0
1911-1920	13·9

The causes of death, age groups, and rates will be found in the following table :

BURGH OF MOFFAT.—DEATHS IN 1928.

CAUSE OF DEATH.	All ages.	–1	1–	5–	10–	15–	25–	35–	45–	55–	65–	75–	85–	Rate per 1
ric Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
us Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
lpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...
les	...	...	...	...	...	...	...	...	...	...	...	...	...	...
rlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ooping-cough	...	...	...	...	...	...	...	...	...	...	...	...	...	...
itheria	...	...	...	...	...	...	...	...	...	...	...	...	...	...
enza	...	...	...	...	...	...	...	...	...	...	...	...	...	...
phalitis Lethargica	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ro-spinal Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
r Epidemic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
nary Phthisis	1	...	...	...	...	...	1	...	...	...	...	...	...	0·39
rculous Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
minal Tuberculosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
r Tuberculous Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
gnant Tumours	4	...	...	...	...	...	...	...	1	1	...	2	...	1·56
matic Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ingitis (not C.S. or Tub.)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
plexy	2	...	...	...	...	...	...	...	...	1	1	...	...	0·78
rt Disease	8	...	...	...	...	...	...	...	...	1	2	4	1	3·12
ases of Arteries	...	...	...	...	...	...	...	...	...	...	...	...	...	...
nchitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
umonia (all forms)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
r Respiratory Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ritis (under 2 years)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ndicitis	1	...	...	...	...	...	1	...	...	...	...	...	...	0·39
r Diseases (not Malignant)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ritis (Bright's Disease)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
peral Sepsis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
r Diseases and Accidents of Pregnancy, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ases of Early Infancy and Malformations	...	...	...	...	...	...	...	...	...	...	...	...	...	...
de	...	...	...	...	...	...	...	...	...	...	...	...	...	...
lence (excluding Suicide)	1	...	...	...	...	...	...	...	...	1	...	...	...	0·39
r Defined Diseases	5	...	...	...	...	...	1	...	...	...	1	2	1	1·95
l-Defined Diseases	1	...	...	...	...	...	1	...	...	...	...	...	...	0·39
TOTAL	23	...	...	...	...	...	4	...	1	4	4	8	2	7·3

Infantile Mortality.—There were no deaths of infants under one year of age. The infantile mortality is therefor nil, as was the case last year.

Infectious Diseases.—Nine notifications of infectious disease were received during the year, a decrease of two on the figures for 1927.

One case of Scarlatina and two of Diphtheria were notified and removed to Hospital. One case of Puerperal Fever was treated in Moffat Cottage Hospital and one at home. Of four cases of Pulmonary Tuberculosis, two were removed to Sanatorium and two treated at home.

The Registrar reported no Objections to Vaccination.

The following figures are abstracted from the return made to the Department of Health for Scotland :

BURGH OF MOFFAT.

CASES OF INFECTIOUS DISEASE NOTIFIED TO THE MEDICAL OFFICER OF HEALTH.

DISEASE	At all Ages	Under 1	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65	65 and upwards.	Cases removed to Hospital.	Cases not removed to Hospital.
Scarlatina	1	...	1	...	...	...	...	...	1	...
Diphtheria	2	...	1	1	...	...	...	...	2	...
Puerperal Fever ...	2	...	...	...	1	1	...	...	1	1
Pulmonary Tuberculosis	4	...	...	...	...	1	3	...	2	2
Total	9	...	2	1	1	2	3	...	6	3

Housing.—Twenty-six houses were erected by the Council during the year, eighteen being of three apartments and eight of two apartments.

Six notices were served under Section 3 of the Housing (Scotland) Act, 1925. The necessary works were thereafter carried out by the proprietors.

One Closing Order was made, and the house closed is now being repaired and made fit for human habitation.

Water Supply.—This continues to be satisfactory. The new main, referred to in last year's report, has been laid, and the pressure throughout the Burgh very much improved.

Sewage Works.—The alterations at the sewage works, which amount practically to a new installation, have now been completed and have, so far, given very satisfactory results. Samples of the effluent and of the river below the point of discharge will be taken during the current year. A new 24-inch storm overflow has been constructed to take storm water from the lower part of the town directly to the river. This should improve the working of the sewage works, and enable a more stable effluent to be obtained.

Slaughter-house.—This has been kept under constant supervision. No seizures of unsound meat were made during the year.

Dairies, Cowsheds, and Milkshops.—There is one Milkshop in the Burgh. It has been visited from time to time and found clean and well conducted.

For details of other sanitary matters reference may be made to the Sanitary Inspector's report.

BURGH OF LANGHOLM.

Area, 204 acres.

Population.—At the Census of 1921 this was 2655. The Registrar-General's estimate for 1928 is 2370.

Births.—Twenty-four were registered. Transfers "out" and "in" were equal, so the figure remains unchanged. Ten of the births were male and fourteen female.

The birth-rate was 10·1 per 1000 living, which is 1·8 above that for the previous year. The average birth-rates for the past decade have been :—

1891-1900	20·1
1901-1910	17·9
1911-1920	15·0

Three births were illegitimate, representing 12·5 of the total.

Deaths.—The deaths registered numbered 55. Corrected for transfers, the number is 51 (27 males, 24 females). The death-rate, corrected for transfers and adjusted for age and sex distribution, was 17·8 per 1000. That for the previous year was 15·7. The average death-rates for the last three decades have been :—

1891-1900	14·5
1901-1910	14·8
1911-1920	15·2

The causes of death, age groups, and rates are shown in the following table :

BURGH OF LANGHOLM.—DEATHS IN 1928.

CAUSE OF DEATH.	All ages	-1	1-	5-	10-	15-	25-	35-	45-	55-	65-	75-	85-	Rate per 1000.
Enteric Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping-cough	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-Spinal Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Epidemic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Phthisis	3	...	...	...	...	2	...	...	1	...	...	...	...	1·47
Tuberculous Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abdominal Tuberculosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Tuberculous Diseases	1	...	...	...	...	...	...	1	...	...	...	...	...	0·49
Malignant Tumours	6	...	...	...	...	...	...	...	...	2	1	2	1	2·95
Rheumatic Fever	1	...	...	...	...	...	1	...	...	...	...	...	...	0·49
Meningitis (not C.S. or Tub.)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Apoplexy	9	...	...	...	...	...	...	...	...	1	5	2	1	4·41
Heart Disease	10	...	...	...	...	...	...	...	...	4	4	2	...	4·90
Diseases of Arteries	1	...	...	...	...	...	...	...	...	...	...	1	...	0·49
Bronchitis	3	...	...	...	...	...	...	...	...	...	3	...	...	1·47
Pneumonia (all forms)	1	...	...	...	...	...	...	...	...	1	...	...	...	0·49
Other Respiratory Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteritis (under 2 years)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Appendicitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Liver Diseases (not Malignant)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nephritis (Bright's Disease)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Sepsis	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases and Accidents of Pregnancy, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of Early Infancy and Malformations	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Suicide	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Violence (excluding Suicide)	1	...	...	...	...	...	...	...	1	...	...	...	...	0·49
Other Defined Diseases	15	...	...	...	1	1	1	1	...	2	4	4	1	7·35
Ill-Defined Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	51	...	...	...	1	3	2	2	2	10	17	11	3	17·8

Infantile Mortality.—There were no deaths of infants under one year of age. The infantile mortality is therefore nil, as was also the case last year.

Infectious Diseases.—Forty-three notifications were received, this being an increase of thirty-four on the figures for 1927. The increase is mainly due to the prevalence of Scarlatina and Chickenpox during the year. One case of suspected Enteric Fever was notified and removed to Hospital. Blood tests proved negative, and the case was ultimately recognised as Tuberculous. The patient was removed to Lochmaben Sanatorium.

Eleven cases of Scarlatina and five of Diphtheria were notified and removed to Hospital. Seventeen cases of Chickenpox were nursed at home, and one of Acute Anterior Poliomyelitis was treated in the Hope Hospital. Six cases of Pulmonary Tuberculosis and two of Non-pulmonary were notified. Three of the former and one of the latter were removed to Sanatorium or Hospital.

The Registrar intimated no Objections to Vaccination.

The following figures are abstracted from the return made to the Department of Health for Scotland :

BURGH OF LANGHOLM.

Cases of Infectious Disease Notified to the Medical Officer of Health.

DISEASE.	At all Ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65.	65 and upwards	Cases removed to Hospital.	Cases not removed to Hospital.
Enteric Fever	1	...	...	...	1	...	...	...	1	...
Scarlatina	11	...	3	7	...	1	...	...	11	...
Diphtheria	5	...	...	4	...	...	1	...	5	...
Chickenpox	17	...	4	11	...	2	...	...	...	17
Acute Ant. Poliomyelitis	1	...	...	1	...	...	...	...	1	...
Pulmonary Tuberculosis	6	...	...	...	1	4	1	...	3	3
Non-pulmonary Tuberculosis	2	...	...	2	...	...	...	...	1	1
Total	43	...	7	25	2	7	2	...	22	21

Housing.—One plan shewing an alteration to increase the accommodation in an existing dwelling-house was passed by the Dean of Guild Court.

Water Supply.—A constant supply was maintained throughout the year. The reservoir was cleaned during March.

During April a complaint was received regarding a taste and peculiar smell noted in the water as drawn off from a tap in one of the factories.

Analyses shewed the presence of nitrites, a higher figure for ammonia (free and albuminoid) than was to be expected, and presence of vegetable fibre and fungal growth in the centrifuged deposit. There was no evident reason for this, as the supply complained of came directly from the town mains. A further sample was taken at the factory, and at the same time a sample from the town's supply, before it passed into circulation. The sample from the factory proved definitely inferior.

Mr Hawley, Public Analyst, and I therefore went to Langholm and examined samples taken at nine places, estimating the degree of colour by Burgess scale and the P.H. value in each case. The sample drawn at the factory gave a slightly higher colour figure than the others—apart from that all the samples gave the same result.

The pipes at the factory were therefore specially scoured, samples being collected before and after this was done. Both gave a satisfactory result, and it seemed that the cause of the trouble had passed away. No further complaints were received.

Sewage Works.—These continue to give satisfactory service.

Slaughter-houses.—There is no municipal slaughter-house. The three private slaughter-houses appear to be as well conducted as their construction permits, but they cannot be regarded as satisfying modern standards. In one, in particular, the lighting is very inefficient.

The number of animals slaughtered during the year was 728. Two hundred and forty-six visits were paid by the Sanitary Inspector, acting as Detention Officer. It was not necessary to seize any meat as unsound.

Dairies, Cowsheds, and Milkshops.—There are three cowsheds and three retail milkshops. These have been kept in satisfactory condition.

Details regarding other sanitary matters will be found in the report submitted by the Sanitary Inspector.

APPENDIX.

Reports from the Chemical and Bacteriological Laboratories.

CHEMICAL LABORATORY.

Mr John W. Hawley, F.I.C., reports as follows :—

As in previous years work for this Department has comprised mainly the examination of samples of Milk and of Water. With the latter may be included Crude Sewage and Sewage Effluent. Sundry problems of diverse nature also arise from time to time, and call for special treatment.

In all 402 samples were received. These represent 44 per cent. of the total number submitted to the Laboratory, and constitute an increase of 160 on the previous year.

MILK.

(1) Graded.

The Milk (Special Designations) Order (Scotland), 1923, regulates the sale of Graded Milk, and fixes the minimum percentage of Milk Fat at 3·5.

One hundred and forty-one Samples, with few exceptions from licensees, received from the Veterinary Inspectors, were examined for Milk Fat content. They were taken at fairly regular intervals throughout the entire year, and averaged 3·96 per cent. of Milk Fat. It is satisfactory to note that producers are able to maintain a figure well in excess of the prescribed minimum and that the average percentage of fat compares favourably with those for the two previous years—1927, 3·96 per cent ; 1926, 3·90 per cent.

The mean percentages of milk fat obtained from samples taken from individual herds are grouped together in Table No. 1. For comparison, figures for the previous year have been included.

Table No. 1.

Producer.	No. of Samples.	Milk Fat. 1928.	Milk Fat. 1927.	Remarks.
A	14	4·28	4·26	These herds comprise mainly Pedigreed and or Recorded Ayrshires.
B	9	4·23	...	
C	12	4·18	...	
D	11	4·10	3·95	
E	9	4·07	4·04	
F	9	3·93	3·82	
G	8	3·92	...	
H	5	3·99	3·89	
I	12	3·90	3·94	
J	5	3·87	...	
K	14	3·83	3·82	
L	9	3·78	3·93	
M	8	3·74	...	
N*	8	3·73	3·94	
Sundry Others.	8	3·57	...	
Mean.	141	3·96	3·96	
Kirkcudbright.	15	4·10	...	

* Licence since withdrawn.

Graded Milk was also received from the Veterinary Officer for the Stewartry. While the figures for Fat (and for Non-Fatty Solids) are slightly in excess of the corresponding figures for Dumfriesshire, it must be remembered that they represent only a few samples.

Throughout the year 97 samples of milk taken under the Food and Drugs (Adulteration) Act were received from various Local Authorities in Dumfries and Galloway. The averages of these vary little among themselves, but fall below those of the Graded supplies. The figures for these 97 samples do not represent the actual mean values for genuine milk, since samples known to be adulterated are included. The comparative data are summarised in Table No. 2.

Table No. 2.

	Food and Drugs Act.			Graded.	
	Dumfries.	Kirkcudbright.	Wigtown.	Dumfries.	Kirkcudbright.
Milk Fat ...	3·75%	3·78%	3·70%	3·96%	4·10%
Mean ...		3·75%		3·97%	

Eight instances (against eleven last year) occurred where the percentage of Milk Fat in Graded samples fell below the required minimum. In view, however, of the high mean values it appears probable that in some cases at least the sample did not represent accurately the bulk supply. Particulars of these are given below.

Table No. 3.

Producer.	Date.	Milk Fat.
L	February	3·20
E	March	3·10
B	April	3·10
N*	May	2·85
	June	3·25
I	June	3·05
D	June	3·35
K	October	3·30

* Licence since withdrawn.

Continuing the practice of previous years, the Non-Fatty Solids were determined whenever conditions permitted. The Order prescribes no standard, but it is desired to have data available for future guidance, and if necessary for use in proceedings under the Food and Drugs (Adulteration) Act, 1928. The results of these, and of the Fat determinations, expressed as monthly and quarterly averages, are shown in Table No. 4. Again, corresponding figures for the previous year are included, together with other comparative data.

Table No. 4.

	Fat.		N.F.S.		T.S.		Ash.	
	1928.	1927.	1928.	1927.	1928.	1927.	1928.	1927.
January	4·16	3·87*	8·54	9·01	12·70	12·88	·71	·75
February	4·04	3·88*	8·91	8·33	12·95	12·71	·71	·73
March	3·98	3·89*	8·78	8·88*	12·76	12·77	·70	·70
April	3·84	3·80	8·49	8·90	12·33	12·70	·72	·72
May	3·79	3·92	8·85	8·86	12·64	12·78	·72	·68
June	3·52	3·68	8·92	9·04	12·44	12·72	·72	·73
July	3·90	4·06	8·88	8·96	12·78	13·02	·72	·71
August	4·29	4·21	8·94	9·04	13·23	13·25	·77	·73
September	4·11	3·77	9·07	...	13·18	...	·76	...
October	3·93	4·14	8·90	...	12·83	...	·76	...
November	4·00	4·24	8·80	...	12·80	...	·75	...
December	3·89	4·07	8·94	...	12·83	...	·71	...

Quarterly.

1st	4·08	3·88*	8·78	8·90	12·86	12·78	·71	·72
2nd	3·72	3·76*	8·75	8·97	12·47	12·73	·72	·73
3rd	4·05	4·08	8·96	8·97	13·01	13·05	·75	...
4th	3·95	4·15	8·87	...	12·82	...	·75	...

Annual.

Graded—								
Dumfries	3·96	3·96	8·85	8·94	12·81	12·90	·74	·72
Kirkb't.	4·10	...	8·96	...	13·06	...	·75	...
F. and D. Act ...	3·75	3·55	8·74	8·73	12·49	12·28	·74	·73
C.M.C. period†	3·72	...	8·67	...	12·39	...	·73	...
All Samples received	3·85	...	8·78	...	12·63	...	·74	...

* Amended from last year's Report.

† Clean Milk Competition, Mar. May.

ACIDITY.

The so-called "Acidity" test is not recognised officially, although it is evidently used largely in commerce for the determination of freshness—or what is practically the same thing the probable keeping quality of Milk. For ordinary Milk the usually accepted limits lie between 14° and 17°, and broadly speaking the inference is that when the "Acidity" rises above 17° the milk is either not fresh or is "dirty" and that it will only remain sweet for a few hours.

The following experience shows that if this test is applied to Graded Milk extreme caution must be employed when interpreting results :

Towards the end of the year a producer in the county, well-known for the exceptional cleanness of his milk, had several consignments rejected for ordinary delivery and diverted for manufacturing purposes, on the ground of high acidity—in this case 18° to 20°. Almost simultaneously another producer in the Stewartry had the same experience, and at least one churn of his milk was actually returned to him. I received a sample of this returned milk from him probably about 72 hours from the time of milking. It was still quite sweet, in fact a considerable portion was actually consumed by the staff. Obviously the inference drawn by the buyers from this test were quite wrong. When received at the Laboratory it had an acidity of 22°, little more than that found by the buyers in London.

Eventually the whole matter was settled by a little local co-operation—combined with an appeal to the cows. Tests made at the Dumfries farm within a few minutes of milking showed an acidity of 15° to 18°. These samples were then taken to the Laboratory, maintained at a temperature of approximately 64° F, and the tests repeated at intervals. After a slight increase during the first 18 hours, the acidity remained more or less constant until the end of 66 hours. An experiment on similar lines made with samples taken from the Stewartry farm yielded parallel results. In fact these tests demonstrated fairly conclusively that a high result in the "Acidity" test yields practically no reliable information as to the probable keeping qualities of Graded Milk of low bacterial count.

The accuracy of this conclusion has been confirmed by the action of the complainers, who have abandoned the "Acidity" test for these supplies, and have since paid the producers in full, even for rejected consignments. The actual results obtained in these tests are shown below.

Acidity expressed as Degrees (c.cs. N per litre).
Age of Sample in hours.

Sample No.	0.	18.	42.	66.	90.	114.	Mixed Milk of
1	16	18·5	18	18	27	54	5 cows.
2	17·3	19·5	19	19·4	34	67	5 cows.
3.	18	20·5	20	21	78	...	5 cows.
4	17·5	19·5	19	20·6	65	...	5 cows.
5	15·5	17·8	17	19	35	65	3 cows.
Mean	16·9	19·1	18·6	19·6	...	...	
Mean Temperature	52 F.	64 F.	64°F.	64 F.	64 F.	64°F.	

The acidity of various other samples was also investigated, and the question is now receiving further consideration. An attempt is being made to collect data relative to the various Graded Herds in the County.

(2) Non-Graded.

The year also saw the institution of a Clean Milk Competition. Following the usual lines, scoring was by means of marks, given under various headings, *e.g.*, care during milking, handling of milk, cleanliness of equipment premises, etc., bacterial count, and sediment, etc.

Marks according to a graduated scale were also given for the percentage of Milk Fat. The scale varied from 50 marks for 3·5 per cent. and over, down to nil when the milk fat fell to 3 per cent.

During the months March, April, and May, 66 samples were submitted by the Veterinary Inspectors. Although the percentage of Milk Fat tends to fall at this period, no sample failed to comply with the 3 per cent. presumptive limit of the Sale of Milk Regulations.

Of 22 samples submitted during March, only one contained less than 3·5 per cent. of Milk Fat, the average percentage being 3·98. A fall occurred in April, when the minimum percentage was 3·21, and the average 3·76. A further fall occurred in May, the average reaching 3·44 per cent., but no sample fell below the requirements of the Sale of Milk Regulations, in fact only four contained less than 3·25 per cent. of Milk Fat.

As milk from competitors' herds was sampled by the Veterinary Inspectors, no question can arise as to the authenticity of samples. Thus the Competition afforded a favourable opportunity for studying variations in the percentages of Non-Fatty Solids. Contrary to the experience with the fats, in 16 instances samples fell below the 8·5 per cent. limit. Particulars of these are as follows :

Competitor.	Date.	Fat.	N.F.S.	T.S.	Ash.	N.F.S. on Fat Free Basis.
D	March	3·85%	8·43%	12·28%	·72	8·77
E	May	3·55%	8·49%	12·04%	·72	8·80
J	May	3·65%	8·41%	12·06%	·74	8·73
M	April	4·25%	8·48%	12·73%	·70	8·85
F	April	3·28%	8·20%	11·48%	·73	8·48
	May	3·02%	8·28%	11·30%	·74	8·53
I	March	3·65%	8·38%	12·03%	·70	8·70
	April	4·00%	8·11%	12·11%	·70	8·45
Q	April	4·03%	8·47%	12·50%	·73	8·83
	May	4·37%	8·37%	12·74%	·69	8·67
G	March	3·53%	8·49%	12·02%	·72	8·80
	April	4·21%	8·13%	12·34%	·70	8·44
	May	3·27%	8·49%	11·76%	·72	8·78
R	March	5·05%	8·41%	13·46%	·71	8·85
	April	3·57%	8·44%	12·01%	·70	8·75
	May	3·35%	8·35%	11·70%	·77	8·64
Limit of Scale of Milk Regulations		3·0%	8·50%			8·76

When the Non-Fatty Solids are calculated on a fat free basis, in 8 cases the deficit is seen to be apparent rather than real. In general, I would conclude from the various data that the 3 per cent. presumptive fat standard of the Sale of Milk Regulations inflicts no hardship on dairymen in the County, it is in fact unduly lenient. Minor deficiencies in Non-Fatty Solids must not, however, be regarded seriously, at least during the months of April and May.

These averages can be compared with those of the corresponding graded samples, thus :

C.M.C.

	Fat.	N.F.S.	T.S.	Ash.
March...	3·98%	8·68%	12·66%	·73
April	3·76%	8·57%	12·33%	·72
May	3·44%	8·74%	12·18%	·74
Period	3·72%	8·67%	12·39%	·73

Graded.

	Fat.	N.F.S.	T.S.	Ash.
March...	3·98%	8·78%	12·76%	·70
April	3·84%	8·49%	12·33%	·72
May	3·79%	8·85%	12·64%	·72
Period	3·87%	8·70%	12·57%	·71

WATER.

(1) Potable.

Examination is made of samples drawn from the Special Water Districts every quarter. Samples are taken half-yearly from the Lockerbie Burgh Supply. The 62 samples received during the year may on a broad general basis be classified as follows :—Excellent, 14 ; Very Good, 27 ; Good, 21.

The presence of Nitrites was noted in the Glencaple Supply, but further investigation negatived the idea of animal pollution.

Eighty other samples were examined for potability. Some had reference to the investigation of complaints regarding existing supplies, other to proposed new sources of supply, or proposed extensions. Broadly, these may be classified as follows:—Excellent, 6; Very Good, 8; Good, 30; Usable, 9; Rejected, 26.

The probable presence of Lead in minute amount was noted in 2 samples taken from existing supplies. That this had evidently been dissolved by water standing for some time in contact with lead pipes was proved by drawing samples after the water had been allowed to remain in the pump overnight. The first portions delivered on pumping were then tested for Lead. In one case Lead Compounds were found in solution equivalent to ·036 part metallic Lead per hundred thousand. After the pump had been worked for some time, another sample was taken. It was free from Lead. In the other case, the first portions delivered on pumping contained ·08 part Lead per hundred thousand.

The continued ingestion of water containing even the lesser of these amounts would soon cause symptoms of poisoning.

Fortunately no cases of chronic Lead poisoning have been intimated, but the possibility of such cannot be ignored.

Trouble was again experienced as a result of an acid water corroding copper piping. The usual symptoms—a greenish scum on the water or round the basin on washing, and green-tinted sponges—were well marked. The remedy consisted in the removal of the acid, usually by lime.

Complaints were received regarding the colour and smell of the water supply to some parts of Langholm, and colorimetric examination was made on the spot of a number of samples taken at various points on the distributing mains. The endeavour to locate the cause of the trouble was not entirely successful, although no further complaints have been received.

(2) River Water.

River pollution and its prevention constitute a problem of increasing importance whether viewed from the administrative standpoint or with regard to the financial value of fishing rights.

Although there are few commercial undertakings of magnitude within the County, several works give rise to considerable volumes of polluting liquors. In two instances at least these are highly charged with readily putrescible organic matter, and their discharge makes a heavy demand on the Dissolved Oxygen in the river water, that is, on the Oxygen essential for the maintenance of fish life. The normal overflow from various Sewage Works of varying efficiency is also led into the rivers.

In view of the general importance of this question, it is very desirable to have detailed information on the general condition of the rivers and of the nature of these polluting liquors.

Nothing approaching a comprehensive survey has so far been possible, but one systematic survey was made of the Wanlock Water. This had particular reference, however, not to Dissolved Oxygen but to the presence of Lead and the possibility of cattle poisoning.

Lead was absent from the River Spango, the Crawick Water, and a feeder of the Wanlock. The River Crawick, after the entry of the Wanlock, and the Wanlock itself contained Lead Compounds in Solution varying from ·008 part Lead per hundred thousand to a maximum of ·87 part Lead per hundred thousand. In the last case, only a short distance from the works, the water has a milky appearance, and it may be noted that more than half of the Lead present was in Suspension as finely divided crystalline Lead Sulphide, *i.e.*, Galena. As the Wanlock Water passed thence to its junction with the Crawick the quantity of Lead gradually decreased, until on dilution with the Crawick not more than ·008 part Lead per hundred thousand was present. It appears that the insoluble Lead is dissolved and re-deposited as another insoluble compound, largely on the stones composing the bed of the river, which are covered by a characteristic deposit rich in Lead. ·4 per cent. Lead was present in the wet deposit. On a dry basis this amount would, of course, be many times greater.

Two samples of Nith Water were examined, one prior to, the other after, the entry of one of the discharges previously mentioned. The effect on the river of this liquor was well marked. A single sample taken from the Cluden Water must be considered clean.

Early in October a series of samples were taken of the River Annan from a point above Moffat to another well below Lockerbie. They afforded useful information as to the effect of the Moffat Burgh sewage then being turned directly into the river while alterations were being made at the Sewage Works. It will be interesting to note the change effected when the crude sewage is subjected to efficient biological treatment.

SEWAGE AND SEWAGE EFFLUENTS.

Intimately connected with the condition of the Rivers is the composition of the effluents from the various Sewage Disposal Works. An unsatisfactory effluent not only imposes an unnecessary strain on the self-cleansing powers of the river, but indicates inefficient working of the Sewage Purification Works.

Two samples of effluent taken from the Thornhill Works, though not quite up to the proposed standard of the Royal Commission, were, nevertheless, well purified and stable effluents.

Of 4 samples of crude sewage taken from the same works, 3 can be regarded as of medium concentration; the other was a weak domestic sewage.

One sample of Moffat sewage discharging directly into the Annan can be regarded as a weak domestic sewage. Its effect, though marked, could not be regarded as unduly serious.

The diluted effluent reaching the Annan from the Lockerbie Sewage Disposal Works seems unlikely to exert much effect on the Annan, partly on account of the respective volumes of effluent and river water; no sample of the effluent itself has been examined.

MISCELLANEOUS.

A certain amount of ponding occurs from time to time at Thornhill Sewage Disposal Works, and an attempt was made to eliminate this by inoculating the filters with the water Springtail—Achorutes Viaticus. These insects had already proved efficacious at the Lochmaben Works, and it was hoped that a similar result might be obtained at Thornhill. The result was, however, unsatisfactory, though no specific reason can be advanced for this. Meantime, the attempt is being repeated under, it is hoped, more favourable conditions.

Scum removed from the tanks at Thornhill Sewage Disposal Works consisted mainly of Fat, and for a time its discharge militated against the efficient working of the filters, whilst adding considerably to the duties of the Works attendant.

The composition of a sample of Human Milk lay within the limits of the normal natural variations, the analysis failing to disclose reason for its non-assimilation by the child.

Another sample of Milk taken from a cow known to be diseased (Weed) was also examined. In view of its abnormal composition, the analysis is given in full.

			Average Composition.	
Fat		·65%		3·70%
Non-Fatty Solids ...		5·26%		8·80%
comprising—				
Lactose	1·31%		4·77%	
Proteins ...	3·01%		3·30%	
*Ash	·944%		·73%	
Total Solids	5·264%	5·91%	8·80%	12·50%
* Containing—				
Insoluble in Water	·612%		·48%	
Soluble in Water	·332%		·25%	
Specific Gravity	1018		1032	

Apart from a yellowish tint this sample had the appearance of a heavily watered skim milk, and was obviously abnormal.

A deposit from stones found in the bed of the Wanlock has been referred to previously.

JOHN W. HAWLEY.

Appended are Tables showing (1) the work done for the Health Department and (2) the total number of analyses made during the year.

Milk.			
Special Designations	150		
Clean Milk Competition	66		
	—		216
Water.			
(1) Potable.			
(a) *Special Water District Supplies.*			
Excellent	14		
Very Good	27		
Good	21		
	—		62
(b) *Others.*			
Excellent	6		
Very Good	8		
Good	30		
Usable	9		
Contaminated	26		
	—	79	
(c) *Partial Examination only.*			
Lead, Copper, Colour, PH, etc.		14	
(2) River (including 7 Partial)		18	
		—	173
Sewage, and Sewage Effluents			9
Miscellaneous.			
Milk (from Diseased Cow)		1	
Milk (Human)		1	
" Scum "		1	
Deposit from River Wanlock		1	
		—	4
			402

	County Council of			Joint Committee of			Burgh of			Ins. Committee of			Other Auth. and Private.	Total.
	Dfs.	Kbt.	Wig.	Dfs.	Kbt.	Wig.	Max.	Stran.	Whit.	D.&M.	Kbt.	Wig.		
Water	173	14	11	...	...	...	...	...	...	...	...	...	36	234
Sewage and Effluent ...	9	...	...	...	...	...	...	...	...	...	...	...	...	9
Food and Drugs	...	...	...	130	154	71	19	15	3	...	...	...	...	392
Medicines	...	...	...	...	...	...	...	...	...	6	4	1	...	11
Milk, (Graded)	150	16	...	...	...	...	...	...	...	...	...	...	...	166
Milk (C.M.C.)	66	...	...	...	...	...	...	...	...	...	...	...	...	66
Fertilisers and Feeding Stuffs, under Act 1926	12	...	...	...	...	...	...	...	...	...	...	...	...	12
Miscellaneous	4	...	...	...	...	...	...	...	...	...	...	...	23	27
Total	414	30	11	130	154	71	19	15	3	6	4	1	59	917

BACTERIOLOGICAL LABORATORY.

Dr Edward Armstrong reports as follows :—

County Health Office,
County Buildings, Dumfries,
25th May, 1929.

To the County Medical Officer,
County Buildings, Dumfries.

Sir,

I beg to submit my Report on the Bacteriological work performed in this Laboratory during 1928.

Three thousand seven hundred and three Bacteriological examinations were made during the twelve months ending the 31st of December, 1928, being an increase of 966 on the previous year. This increase is due partly to the increased number of Swabs submitted for Diphtheria, partly to the increased number of Milk examinations now carried out, and partly to the number of Sputa submitted for examination.

For the purpose of comparing the figures of examinations made during 1928 and 1927, the following data are given in Table 1 :

Table 1.

	1928.	1927.	Increase or Decrease.	
Swabs for Diphtheria	1450	985	465	...
Sputa	558	426	132	...
Widals	30	19	11	...
Blood Cultures	4	4	...	...
Blood Examinations	61	39	22	...
Cerebro-Spinal Fluid	29	10	19	...
Fæces	27	33	...	6
Urines	103	62	41	...
Pus and Pathological Fluids ...	52	49	3	...
Miscellaneous	48	53	...	5
Wassermann	207	159	48	...
Gonococci	167	223	...	56
Milk	499	259	240	...
Water	158	129	29	...
Histological	99	58	41	...
Anthrax	169	149	20	...
Vaccines	42	80	...	38
Total	3703	2737	1071	105

Increase, 966.

Swabs for Diphtheria.—These have been taken for the purpose of diagnosis, of determining length of treatment, and of detecting carriers. They are not a true index of the amount of diphtheria present, as in some cases it is necessary to take six or seven or even more swabs before reporting that the throat is free from C. Diphtheriæ. Large variations in their number are to be expected from year to year. The year 1928 shows an increase of 465.

Sputa shows an increase of 132.

Of the total of 558, 525 were examinations for the Tubercle Bacillus, the remaining 33 being for the determination of other causal organisms in respiratory disease.

Widal's reaction for bacilli of the enteric group shows a small increase.

Venereal Disease.—To help the detection of this in suspected patients 207 Wassermann reactions were done, and also 167 examinations for Gonococci. The former figure shows an increase, the latter a decrease, but the total remains about the same as last year.

Milk.—The examinations of milk again show a marked increase. The figures for 1928 are almost double those for 1927, and are more than four times those for 1926. The actual number carried out was 499, 94 being done for outside sources and 405 for the County Authorities. As regards Dumfriesshire, these milks taken from various sources of supply were subjected to examinations for (1) Bacterial Count, (2) Presence of tubercle bacillus, (3) Presence of other pathogenic organisms, *e.g.*, the causal organism of bovine mastitis.

Ninety-nine examinations for the Tubercle bacillus were done, of which 15 were positive. These figures are not an index of bovine tuberculosis, as animals which are clinically tuberculous are often taken under the Tuberculosis Order without an examination. The samples submitted are usually those in which there is an element of doubt in the diagnosis.

Seventy milks were submitted for other organisms, and the remainder (236) for bacterial count.

Out of this number of 236, 121 were for the purposes of testing graded milks.

During the year under review a Clean Milk Competition was held. The results, which were highly satisfactory, have already been reported by Dr Ritchie, Medical Officer of Health.

The following bacteriological standards for graded milk have been prescribed by the Scottish Board of Health :

Certified.—The milk must not contain more than 30,000 organisms per c.c., or any Bacillus Coli in 1/10th c.c.

Grade A (Tuberculin Tested).—The milk must not contain more than 200,000 organisms per c.c., or any Bacillus Coli in 1/100th c.c.

Separate tables showing details of bacterial counts are given for graded milks and non-graded milks (exclusive of those taken in the Clean Milk Competition, which numbered 66).

Anthrax.—The number of examinations for Anthrax is still sustained at the high figure of 169, which is 20 more than that of the previous year. Of these, 6 were positive, and all were confirmed by the Board of Agriculture.

Histological examination of tissue is being continued still, and 99 specimens were submitted. Of this number, 66 came from the Dumfries and Galloway Royal Infirmary, 25 were from private practitioners, and 8 were sent in by County Officials. The examinations of the tissues were made for the purposes of diagnosis or prognosis, or to see if further treatment was necessary.

Vaccines are also being continued, but the number done has fallen from 80 to 42.

Waters.—158 samples were examined, and of this number 4 were done for the Stewartry of Kirkcudbright and 7 for private individuals. The remaining 147 consisted of the quarterly examinations of the supplies to Special Water Districts, and of other waters used as, or intended for use as, domestic supplies. A table has been drawn up, showing the results of examinations of Special Water District Supplies, so far as the presence of Coliform Bacilli is concerned.

Another table has also been drawn up showing the sources of pathological material, and the actual material submitted.

I have the honour to be, Sir,

Your obedient Servant,

EDWARD ARMSTRONG.

GRADED MILKS.

Microbes per c.c.	No. of Samples.	B. Coli.							
		Absent from 0·1 c.c.		Present in 0·1 c.c.		Present in 0·01 c.c.		Present in 0·001 c.c.	
		No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.
Under 30,000	108	88	72·7	10	8·3	9	7·5	1	0·8
Above 30,000 and under 200,000	9	1	0·8	4	3·3	1	0·8	3	2·5
Over 200,000	4	0	0	2	1·7	0	0	2	1·7
Total	121	89	73·5	16	13·3	10	8·3	6	5·0

NON-GRADED MILKS (exclusive of Clean Milk Competition).

Microbes per c.c	No of Samples.	B. Coli.							
		Absent from 0·1 c.c.		Present in 0·1 c.c.		Present in 0·01 c.c.		Present in 0·001 c.c.	
		No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.
Under 30,000	35	21	42·9	7	14·3	1	2	6	12·2
Over 30,000 and under 200,000	10	1	2	4	8·2	3	6·1	2	4·1
Over 200,000	4	0	0	0	0	0	0	4	8·2
Total	49	22	44·9	11	22·5	4	8·1	12	24·5

TABLE SHOWING SPECIMENS SUBMITTED AND SOURCE OF SUPPLY.

	Dumfries County	V.D. Clinic	Burgh of Dumfries	Burgh of Maxwelltown	Burgh of Annan	Burgh of Sanquhar	Burgh of Lockerbie	Burgh of Moffat	Burgh of Langholm	Burgh of Lochmaben	Stewartry of Kirkcudbright	Wigtown County	Burgh of Stranraer	Dumfries and Galloway Royal Infirmary	Private	Total
Swabs (Diphtheria)... ...	901	...	224	50	13	3	9	3	17	28	142	47	6	7	...	1450
Sputa	158	...	157	34	13	5	6	5	6	2	6	37	4	13	2	558
Widals	13	...	5	2	3	...	...	...	...	...	4	1	...	2	...	30
Blood Cultures	1	...	...	...	...	...	...	...	...	...	1	...	...	2	...	4
Blood Examinations ...	14	...	14	9	1	...	1	...	...	...	9	2	...	9	2	61
Cerebro-Spinal Fluid ...	1	...	6	2	...	...	...	...	...	...	9	4	...	7	...	29
Faeces	15	...	4	2	...	...	...	...	...	...	3	3	...	...	...	27
Urines	35	...	28	4	2	...	...	...	...	...	19	5	...	6	4	103
Pus and Pathological Fluids	18	...	4	...	...	...	...	...	...	...	10	3	...	17	...	52
Miscellaneous	28	...	9	2	...	...	...	...	...	...	3	3	...	2	1	48
Wassermann	49	74	39	6	...	...	...	...	...	...	8	5	...	26	...	207
Gonococci	27	89	7	1	*	*	*	*	*	*	16	15	...	12	...	167
Milk	405	...	31	...	*	*	*	*	*	*	43	10	...	...	10	499
Water	147	...	...	...	...	...	...	...	...	...	4	...	...	...	7	158
Histological	8	...	...	...	...	...	...	...	...	...	...	...	...	66	25	99
Anthrax	169	...	...	...	...	...	...	...	...	...	...	...	...	...	...	169
Vaccines	...	...	...	...	...	...	...	...	...	...	...	...	...	...	42	42
																3703

* Included in County numbers.

WATER SUPPLIES TO THE SPECIAL WATER DISTRICTS.

Smallest amount of Sample in which Coliform Bacilli were detected.

Quarters.	I.	II.	III.	IV.
Penpont	100 c.cs.	...	...	...
Moniaive	100 c.cs.	10 c.cs.	1 c.c.	1 c.c.
Thornhill	100 c.cs.	1 c.c.	1 c.c.	100 c.cs.
Kirkconnel	100 c.cs.	1 c.c.	1 c.c.	10 c.cs.
Crawick...	100 c.cs.	1 c.c.	0·1 c.c.	100 c.cs.
Netherwood, Kelton, & Craigs	...	100 c.cs.	100 c.cs.	...
Glencaple	100 c.cs.	1 c.c.	10 c.cs.	10 c.cs.
Blackshaw	...	...	...	...
Dumfries (Landward)	...	...	...	100 c.cs.
Ruthwell and Raffles ...	100 c.cs.	...	100 c.cs.	100 c.cs.
Lower Annandale ...	100 c.cs.	100 c.cs.	10 c.cs.	10 c.cs.
Eaglesfield	...	100 c.cs.	10 c.cs.	10 c.cs.
Ecclefechan	10 c.cs.	100 c.cs.	1 c.c.	10 c.cs.
Bankshill	...	10 c.cs.	1 c.c.	100 c.cs.